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Question 12 Comments (154 Responses)
Question 13 (0 Responses)
Question 13 Comments (154 Responses)

Individual
Kevin Conway
Intellibind
No
I agree in principle with the changes; however the definition and direct effect on certain small entities has not been improved. Primarily there are many entities that will be included that are marginal at best. Such entities will include intermittent generation such as wind, which may, or may not fit into the designation of aggregation of up to 75 MVA. It is becoming a practice to size a farm, or phase of a farm, to under 75MVA to get around the rules. A site is not defined and could be defined very narrowly. I do not agree with the 20MVA threshold for single generators when the generators net output cannot reach the 20MVA output. Trash burning facilities have heavy station service loads and by nameplate are included when in reality they operate below the arbitrary cut off. FERC has asked for technically justified standards, and the proposed BES definition still applies an arbitrary threshold not supported by technical argument. This issue is further aggravated by location of these resources. Many of these resources are remotely located specifically so that they have no, or minimize impact on the BES. Many times they are on long lines that are over 100KV simply because of efficiency in electrical transmission.
Yes
No
In the discussion the Drafting team stated they found no technical rational to change the 20 MVA rule, however there is no technical rational to support 20 MVA either. There are arguably cases where it will be appropriate to include these generators; however there are may instances where these

generators should not be included. This should be driven by the interconnected transmission operators, not by an arbitrary threshold. In the WECC there are multiple examples of small/medium hydro, waste-to-energy, and other non-dispatchable generation that not only are located where they cannot add to the reliability of the BES, are not manned, and are bound by contractual relationships by a BA. These facilities have a tendency to have multiple forced outages, are affected by weather events, and are not considered reliable by the interconnected transmission operator for BES reliability purposes. Many of these facilities generate power as a secondary business, not primary. Wood burning, trash burning is waste disposal, irrigation projects are primarily focused on water delivery. Failure of power generation is not addressed as a primary importance during a failure, and none of these facilities were constructed to benefit the BES. In many cases the contract to construct these facilities was predicated on proving they do not impact the interconnected transmission operator or the BES.
No
Though as previously stated I do not think that the 20 MVA threshold has technical merit, I do not believe that the 75MVA limit has technical merit either. Further the impact should be measured at the buss bar not at the nameplate. The aggregate rating should be the same as the individual unit rating on a single plant, unless the plant can prove that there is not a common failure mode to lose more than 20MVA.
Yes
There continues to be confusion in the industry of blackstart by Generator Owners and Operators (especially small to medium generation), and the drafting team should clearly define what is meant by blackstart. Many small generators have the capability to blackstart their resource, but are not part of the Transmission Operator's blackstart plan on restoring the BES. In most cases they are asked to blackstart if possible and wait until lines are energized and close in as directed by Transmission Operator. This is significantly different than owning a blackstart resource designated to provide power during a blackout.
No
Though the intent is understood through the discussion, the language presented is not clear enough. The drafting team should be cautioned on how Standards are read through many different entities and audiences. The team should also understand if the issue is not clearly defined, there will continue to be ambiguity through the registration and compliance processes. As previously stated on an earlier question, I do not think that the 20 MVA threshold has technical merit, I do not believe that the 75MVA limit has technical merit either. Further the impact should be measured at the buss bar not at the nameplate. The aggregate rating should be the same as the individual unit rating on a single plant, unless the plant can prove that there is not a common failure mode to lose more than 20MVA.
No
Small radial systems that have two interconnection points at the same location or very close to the same location, but are not used for Transmission flow through should also be excluded. There are numerous examples of two interconnection points that are paralleled by much higher voltage systems and do not flow power through the system, but are redundant to increase distribution reliability. This should be left to the Transmission Operator/Transmission Owner to determine if there is flow through and impact to the BES before designating these as BES assets based on interconnection points. Radial should be defined as power flowing one direction only, not based on how it is interconnected to 100KV or higher lines.
No
This is very confusing. Understanding the Drafting Team's goal, it would better to adjust the I2 and I3 criteria to address NET generation and behind the meter generation. E2 appears to try and address the net generation versus nameplate issue, but not fully. Station service power is behind the meter and it is a commitment of the resource. Many small generators have multiple processes outside of power generation they must provide for, and these should be considered in the exceptions.
Yes
This does address some of my concerns on small radial transmission systems. I think that there will be confusion when small entities try and apply both E3 and E1 to their particular situations. The ambiguity will cause more questions than it is trying to answer.
No

This does not address the full concerns of these small entities. In on case I am familiar with the entity has a switchyard over 100KV and it was convenient for the interconnected utility to utilize the location of the switchyard to add a line for the Transmission Operators purpose, however now that there are two lines into the switchyard it has affected the small utility and they will not have exemption as described in Question 10. The financial burden is very high for these entities when not exempted. In this particular case noted above, the entity is planning to eventually decommission its system, but is caught in having to bear the cost of operating a transmission system even though it is only one substation that is immediatly stepped down to 13.8Kv and feeding a small distributed load. The proposed exemption will still not allow this entity to be exempt. The ROP process does not serve these small utilities well as an alternative and the Drafting Team should resolve these issues in the definition of the BES if possible.

No

Due to the voltage bright line of 100kV there is still a question of what makes up sub-transmission. Many rural companies with large geographic areas use the 115kV system internally as sub transmission, but because of the bright line it is considered part of the transmission system. This is not its purpose, or how it is operated. There are no commercial paths, and no transmission flow through. On the other hand there are significant generation resources (significantly over 20MVA) that are interconnected directly through the sub transmission system to the BES, and by definition, since they are not interconnected at 100kV, they are exempted from BES status. Some of these facilities do have direct impact on the BES.

No

Generation that is BES significant that is not connected at 100kV or above.

Individual

Si Truc PHAN

Hydro-Quebec TransEnergie

No

The bright line revised definition could expand significantly what is considered to be BES in the case of HQT, with no discernible impact on the reliable operation of the interconnected system, because of the nature of the Québec interconnection. Furthermore, it should be stated that there appears to be a conflict between the proposed definition and the regulatory framework applicable in Québec or at least there are some important differences between both. The non-FERC juridiction was acknowledged by FERC Order 743 in paragraph 95. As an example, the Québec regulatory framework considers that there are several levels of application for standards, not only one. A single BES definition cannot apply to all standards. The definition must include more latitude for non-FERC jurisdictions, as long as the reliability objective is achieved.

No

Since transformers are already part of "all transmission Elements operated at 100 kV and above" in the definition, and since inclusions I2 to I5 are commonly related to only generation, I1 should be removed and replace instead by the following Exclusion: Ex "Transformers not used as Generator Step-Up (GSU) transformers that have primary or secondary winding at less than 100 kV."

No

We believe that it is not necessary to include small generator of 20 MVA into the BES, neither the transmission path that connect them. However, a provision should be made so that some reliability standards related to generator shall apply (voltage regulation, etc.).

No

We believe that automatic inclusion of 75 MVA generation and the path to connect them to the BES should not be automatically included in the BES. However, a provision should be made so that some reliability standards related to generator shall apply (voltage regulation, etc.).

No

When we have to use Blackstart Resources, there is no more system. Therefore, reliability is not a system planning issue, the need is no more for reliability since we lost the System or part of it. It becomes a need for restoration of the system as fast as possible. The restoration plan is necessary, but the Blackstart Resources and do not contribute to the reliability of the System, which just failed,

but to limit the time of loss of service. There is no obligation to apply the same Reliability Standards on the paths and it should not be automatically included in the BES.
No
We believe that automatic inclusion of dispersed generation greater than 75 MVA and the path to connect them to the BES should not be automatically included in the BES. However, a provision should be made so that some reliability standards related to generator shall apply (voltage regulation, etc.).
No
It is too much restrictive to refuse exclusion of radial system when they have generator greater than 20 MVA, or multiple generating units of aggregate capacity greater than 75 MVA, especially when a system is able to function reliably with the loss of generation much higher than this amount. The fact that no Reliability Standards apply to generators excluded from BES is problematic. Generators should be allowed to be excluded but reliability standards should apply to them in specific. Also, the connection through only a single Transmission source is again too restrictive. Other Transmission source could be used for load continuity of service and the restriction should be limited to radial transmission paths where the power flow is greater than the first contingency lost.
No
Part b) is again very restrictive. It is not necessary to refuse exclusion when generation is above 75 MVA. However, a provision should be made so that reliability standards related to generator shall apply.
No
The case of small Utility is covered through other exclusions. However, the Facilities owned by small utility should have protection requirement applied.
No
See comments on E3 (Q.9)
Yes
There appears to be a conflict between the proposed definition and the regulatory framework applicable in Québec or at least there are some important differences between both. NERC's proposed definition of Bulk Electric System (“BES”) is made in response to FERC's Order 743. FERC is looking to remove regional discretion, and in some cases to make sure BES includes the most important national load centers. As for HQT's System, the BES definition shall meet the expectations of Quebec's regulator, the Régie de l'Énergie du Québec, (Quebec Energy Board) which has the responsibility to ensure that electric power transmission in Québec is carried out according to the reliability standards it adopts. In a recent order (D-2011-068), the Régie de l'Énergie du Québec has recognized several level of application for the Reliability Standards in Québec. It stated specifically that most reliability standards in Québec shall be applied to the Main Transmission System (MTS). One other level of application recognised by this decision is the NPCC Bulk Power System (BPS) to which the standards related to the protection system (PRC-004-1 and PRC-005-1) and those related to the design of the transmission system (TPL 001-0 to TPL-004-0) will be applicable. The Main Transmission System definition is somewhat different than the Bulk Electric System definition. The Main Transmission System includes elements that impact the reliability of the grid, supply-demand balance and interchanges. It can be described as follows : The transmission system comprised of equipments and lines generally carrying large quantities of energy and of generating facilities of 50 MVA or more controlling reliability parameters: • Generation/load balancing • Frequency control • Level of operating reserves • Voltage control of the system and tie lines • Power flows within operating limits • Coordination and monitoring of interchange transactions • Monitoring of special protection systems • System restoration Therefore, it will be necessary to accommodate NERC's proposed definition of BES or the exception process with the Québec situation where Entities are under a different jurisdiction. These differences include more than one level of application for the reliability standards, the Main Transmission System definition being the main one to which most reliability standards apply.
Individual
Martin Bauer

US Bureau of Reclamation
Yes
Yes
Yes
Yes
Yes
Yes
Yes
No
The term "retail load" is ambiguous and unnecessary. The term should be changed to "load". The change is justified by the conditions (i) and (ii) placed on the generators.
Yes
No
The small entities can seek exclusion using the BES Exception Process developed under this project.
Yes
No
Individual
Jerome Murray
Oregon Public Utility Commission Staff
No
The inclusion of individual generation units with a nameplate capacity between 20 MVA and 75 MVA is over-inclusive and unnecessary. Generation in this range generally has no impact to the reliability of the bulk transmission system. The 20 MVA threshold was pulled from the existing NERC Statement of Compliance Registry. This Registry value was adopted without the benefit of having been scrutinized through a NERC Standards Development Process, so the technical record justifying the 20 MVA threshold is unavailable. The BES Drafting Team will need to have technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different framework. Absent any technical justification, Inclusion I2 should be eliminated. This would leave the 75 MVA threshold in Inclusion I3 and Inclusion I5 as the minimum BES thresholds for generation. The proposed BES Definition does not address the BES “demarcation points” and whether the BES must be “contiguous.” NERC Staff has submitted written comments to this project stating that the BES “must be contiguous.” Instituting a contiguous BES with Inclusion I2 would result in a over-inclusive BES definition. The adoption of a “contiguous” BES is therefore likely to result in imposition of reliability standards on a substantial number of distribution elements that have nothing to do with improving or protecting the reliability of bulk transmission system. There is no compelling reason to adopt a “contiguous” BES down into local distribution systems. Section 215 of the FPA of 2005 gives FERC jurisdictional authority over “users” as well as “owners” and “operators” of the bulk power system. Consequently, FERC has the jurisdictional authority to require generation entities in the

Compliance Registry to comply with applicable NERC requirements. Hence, even where an entity does not own or operate BES assets, it could still be required, for example, to provide necessary information to the applicable Reliability Coordinator or Planning Coordinator and to participate in programs to prevent instability, uncontrolled separation or cascading outages to the bulk transmission system. This approach would fully achieve the goals of bulk transmission system reliability without imposing the full BES regulatory compliance burden on local distribution elements.

Yes

Exclusion I as currently proposed adequately defines radial systems; however, Inclusion I2 language should be removed per the rationale stated in the response to Question 3 above. To retain the Inclusion I2 language herein would sweep in an abundance of distribution elements that have no impact on the reliable operation of the interconnected bulk transmission system.

Yes

Exclusion E3 is absolutely necessary for excluding local distribution elements from the interconnected bulk transmission system as required by Section 215 of the FPA of 2005. This exclusion mirrors the Seven Factor Test (established in FERC Order 888), which sets sound overarching principles for differentiating local distribution elements from bulk transmission elements. Also, the conversion of radial systems to local distribution networks is generally implemented by a distribution provider to improve the level of service to local retail customers, not to accommodate bulk transfer of wholesale power. Retaining Exclusion E3 is absolutely crucial for maintaining the 100 kV brightline in the core BES definition. Without the distribution network E3 exclusion, the voltage threshold in the core BES definition would need to be changed to the 200 kV level. Otherwise, NERC and Regional Entities will have to deal with endless exception applications and evaluations associated with the removal of local distribution elements that have no impact on the reliable operation of the interconnected bulk transmission system.

No

Without BES "demarcation" and "contiguous" principles being addressed in the proposed BES definition, this question is difficult to answer. NERC Staff has submitted written comments to this project stating that the BES “must be contiguous.” Instituting a contiguous BES with Inclusion I2, for example, would result in a substantially over-inclusive BES definition. The adoption of a “contiguous” BES is therefore likely to result in imposition of reliability standards on a substantial number of distribution elements that nothing to do with improving or protecting the reliability of bulk transmission system. There is no compelling reason to adopt a “contiguous” BES down into local distribution systems. Section 215 of the FPA of 2005 gives FERC jurisdictional authority over “users” as well as “owners” and “operators” of the bulk power system. Consequently, FERC has the jurisdictional authority to require generation and other entities in the Compliance Registry to comply with applicable NERC requirements. Hence, even where an entity does not own or operate BES assets, it could still be required, for example, to provide necessary information to the applicable Reliability Coordinator or Planning Coordinator and to participate in programs to prevent instability, uncontrolled separation, or cascading outages to the bulk transmission system. This approach would fully achieve the goals of bulk transmission system reliability without imposing the full BES regulatory compliance burden on local distribution elements.

Individual

Eric Lee Christensen

Public Utility District No. 1 of Snohomish County, Washington

Yes

As a general matter, Snohomish County PUD supports the approach the Standards Development Team (“SDT”) has taken to defining the Bulk Electric System (“BES”). In the comments we submit

today, we identify several refinements we believe would improve the definition. We also discuss the legal framework the SDT must operate under as we understand it. But we support the SDT's conceptual approach and, if refined as we suggest, we will support the SDT's proposal so long as an acceptable process for defining exceptions accompanies the definition. As to the core definition addressed in Question 1, Snohomish believes the changes made in the revised definition are helpful and represent significant progress toward an acceptable definition. Nonetheless, we are concerned that the core definition is overly-broad and sweeps facilities into the BES that are required by the statute to be excluded, even considering the list of inclusions and exclusions. We therefore suggest two different approaches below that may achieve the SDT's aims more effectively than the proposed core definition. At a minimum, as we explain below, additional clarifications to the core definition are necessary and an acceptable exemption process is required to ensure that facilities that by statute must be excluded are excluded from the BES as defined by the SDT. At the outset, we urge the SDT to bear in mind the specific restrictions on the definition of "bulk-power system" contained in Section 215 of the Federal Power Act ("FPA") (Following FERC's guidance on the question, we treat the statutory term "bulk-power system" as equivalent to the term ordinarily used in the industry, "Bulk Electric System"). In Section 215(a)(1), Congress defined "bulk-power system" to mean "facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)" and "electric energy from generation facilities needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1). Congress unequivocally excluded from this definition "facilities used in the local distribution of electric energy." Id. The "bulk-power system" definition thus imposes a clear limit on the reach of the mandatory reliability regime. Congress reinforced that limit in Section 215(i), where it emphasized that the FPA authorizes the imposition of reliability standards "for only the bulk-power system." 16 U.S.C. § 824o(i)(1) (emph. added). Further, the SDT must bear in mind "the cardinal rule that a statute is to be read as a whole since the meaning of statutory language, plain or not, depends on context." City of Mesa v. FERC, 993 F.2d 888, 893 (D.C. Cir. 1993) (citation omitted). In considering how Congress used the term "bulk-power system" in the statute, as well as the limits on the reliability regime imposed in the surrounding statutory language, it is clear that Congress intended the "bulk-power system" to be defined narrowly so that it would incorporate only high-voltage, interstate facilities used to transmit power over long distances, whose failure threatens drastic reliability events such as cascading outages. These limitations are plain from, for example, the statutory definition of "reliability standard," which provides that reliability standards are to encompass only requirements to "provide for reliable operation of the bulk-power system." 16 U.S.C. § 824o(a)(3) (emph. added). Congress further refined the scope of reliability authority by specifically defining "reliable operation" to mean "operating the elements of the bulk-power system within equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of such system will not occur as a result of a sudden disturbance. . . or unanticipated failure of system elements." 16 U.S.C. § 824o(a)(4). Congress's intent to focus the national reliability regime on broad-scale threats to the interconnected, interstate high-voltage system like cascading outages is made clear, as well, by Congress's specific direction that the mandatory reliability system is prohibited from enforcing standards for adequacy of service, which were left to state and local authorities. 16 U.S.C. § 824o(i)(2). When read in the context of the statute as a whole, the definition developed by the SDT should therefore focus on that portion of the interconnected bulk transmission grid for which thermal, voltage, and stability limits must be observed in order to prevent instability, separation events, and cascading outages. Further, in order to honor the specific limits placed on the definition by Congress, the SDT's definition must exclude facilities used in the local distribution of electric power and it must exclude facilities whose operation or mis-operation affects only the level of service and does not threaten cascading outages or other widespread events on the bulk interconnected system. Snohomish is concerned that the SDT's proposed definition is overly-broad, and that it will sweep in many Elements that have little or no material impact on the reliable operation of the interconnected bulk transmission grid. For example, the definition would sweep in all generators with 20 MVA capacity even though generators this small rarely create impacts on the interconnected bulk transmission system that would threaten to violate the thermal, voltage or stability limits of the bulk transmission system and therefore do not threaten instability, separation, or cascading outages on the interconnected transmission system. Accordingly, for the BES definition to conform to the requirements of the statute, the SDT must adopt an effective mechanism to exempt facilities like these that are improperly swept in by the SDT's brightline approach to inclusions and exclusions. For this reason, the Exception process to accompany the SDT's definition is of critical concern. It constitutes the last line of defense against a SDT definition that

sweeps in facilities excluded by the statutory definition. Snohomish believes the SDT can achieve the goals of FERC's Orders No. 743 and 743-A while honoring these statutory limits by taking one of two alternative approaches to the core definition. First, perhaps the simplest way the SDT could achieve the goals of FERC Order No. 743 while avoiding overbreadth that violates statutory limits is to simply adopt the statutory definition of "bulk-power system" as the core definition. This approach is commonly used by regulatory agencies in defining key jurisdictional terms to ensure that the agency does not cross statutory boundaries when carrying out the duties assigned to it by Congress. Under this approach, the core definition would simply echo the statutory definition, substituting "Bulk Electric System" for its statutory equivalent, "bulk-power system": The term 'Bulk Electric System' means: (A) Facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and, (B) Electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy. See 16 U.S.C. § 824o(a)(1). The inclusions and exclusions developed by the SDT, with the refinements we discuss below, would then be added to provide guidance in the application of this definition to specific classes of electric system facilities and Elements. A second alternative approach is to make the smallest possible adjustment to the current BES definition that suffices to address the central concern expressed by FERC in Orders No. 743 and 743-A. Those orders emphasized that FERC's concerns are with the initial phrase in the current NERC BES definition, which provides that the "Bulk Electric System" is: As defined by the Regional Reliability Organization, the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. In Order No. 743, FERC made clear that it views the initial phrase ("As defined by the Regional Reliability Organization") as creating unreviewable discretion for Regional Entities to define the BES in their region, and that this unreviewable discretion, rather than lack of uniformity per se, is the problem Order No. 743 is designed to remedy. See, e.g., Order No. 743, 133 FERC ¶ 61,150 at P 16 (2010) (FERC believes the "best way to address these concerns is to eliminate the Regional Entities' discretion to define 'bulk electric system' without ERO or Commission review"; id. at 30 (same). In Order No. 743-A, FERC clarified that the primary aim of its rulemaking was to eliminate this unreviewed regional discretion, and it was not, as FERC had originally proposed, to create a uniform national definition that does not allow for any regional variation. Order No. 743-A, 134 FERC ¶ 61,210 at P 11 ("We clarify that the specific issue the Commission directed the ERO to rectify is the discretion the Regional Entities have under the current bulk electric system definition to define the parameters of the bulk electric system in their regions without any oversight from the Commission or NERC."); id. at P 39 ("The Commission's suggested solution simply would eliminate regional discretion that is not subject to review by [NERC] or the Commission"). Accordingly, the SDT could achieve the primary aim of Order No. 743 by simply rewriting the current definition to read: Unless a different definition has been developed by the Regional Reliability Organization and approved by NERC and FERC, the Bulk Electric System is defined as the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. If the SDT uses this suggested language as its core definition, it will have addressed FERC's primary concern with a minimum of disruption to the current NERC system of definitions. The definition could then be further elaborated with the list of specific inclusions and exclusions of Elements and systems (modified as discussed below), to provide more specific guidance to the industry. In this connection, we note that a 200 kV threshold would be more appropriate for WECC than a 100-kV threshold. This is because generation in the West is generally located far from load, and power is generally transmitted from these generation sources to distant load centers on extremely high-voltage lines, usually operating in the range of 230-kV to 500-kV. Further, because loads are often dispersed across relatively broad geographic areas, especially in the rural West, 115-kV lines are frequently used in local distribution systems. See WECC Bulk Electric System Definition Task Force, Initial Proposal and Discussion, at pp. 11-16 (posted May 15, 2009) (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx) (technical discussion showing that most transmission in the Western Interconnection operates at voltages greater than 200 kV). Accordingly, a 200-kV threshold with an "inclusion" mechanism to sweep in the relatively limited number of 115-kV lines in the West that perform a transmission function would be better suited to the typical topology of systems in the West than a 100-kV threshold with exceptions for facilities that operate as local distribution. That being said, we recognize that 200-kV may not be an appropriate threshold for other parts of the country and we are willing to support the SDT's approach as long as discretion is preserved for the WECC to develop a definition better suited to the conditions in the

Western Interconnection. If the STD elects not to adopt one of the above suggestions, the core definition proposed on April 28 requires clarification. Specifically, as drafted, the proposed definition is ambiguous in that it is not clear whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. To eliminate this ambiguity, we suggest that the proposed definition be reordered to read as follows: Bulk Electric System (BES): (A) Unless included or excluded in subpart B, the Bulk Electric System consists of: (1) all Transmission Elements operated at 100 kV or higher; (2) Real Power resources identified in subpart B; and, (3) Reactive Power resources connected at 100 kV or higher. (B) [the list of inclusions and exclusions, modified as discussed in our responses to questions 2 through 9]. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart B modifies each provision of Subpart A. Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart B of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Snohomish supports the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the Federal Power Act ("FPA"), 16 U.S.C. § 824o. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as "Generation" that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as "Facility" that include "Bulk Electric System" as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase "Bulk Electric System" as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT's use of defined terms such as "Element," "Real Power," and "Reactive Power."

Yes

In concept, we support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. In this regard, we note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC's BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort. Also, the reference to "two windings of 100 kV or higher" may create some confusion because many three-phase transformer banks have 6 or 9 windings, depending on whether the transformer has a tertiary. We suggest clarifying this provision by changing the clause referencing two windings to read: "the two highest voltage transformer windings of 100 kV per phase that are connected to the Bulk Electric System."

No

Snohomish is concerned that the inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain

transmission system reliability." 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted improperly expands the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because "there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria." Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are "needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." But this conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. In fact, we believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Developoment Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the

classification of dedicated interconnection facilities as “BES” facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a “contiguous” BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES “contiguous.” Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES “Transmission” facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a “contiguous” BES. On the contrary, because Section 215 allows reliability standards to be applied to “users” of the bulk system as well as “owners” and “operators,” local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. The other alternative is to draft standards that apply to a specific type of equipment – again UFLS relays is a good example – rather than to BES facilities categorically. Either approach will fully achieve the goals of bulk system reliability without imposing an undue regulatory compliance burden on local distribution systems. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application of particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a “contiguous” or “non-contiguous” BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.
No
Snohomish is concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy “needed to maintain transmission system reliability” and are therefore properly included in the BES definition.
Yes
Including “all” blackstart and blackstart cranking paths in the BES may ultimately provide an incentive to the electric industry to reduce the number of resources with blackstart capability. We therefore suggest that essential blackstart resources identified by the Regional Entity should be included in the Bulk Electric System, but non-essential blackstart resources need not be.
No
Snohomish agrees that it is important to address wind generation facilities and similar generation facilities in which a large number of generating units, each with a relatively small capacity, are clustered and fed into the grid at a single interconnection point. That being said, Snohomish is concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained. We believe the exclusion as drafted adequately defines radials.
Yes
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold (through reference to Inclusion I2) lacks an adequate technical justification in this context. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit (“standby, back-up, and maintenance power…”) should be eliminated.
Yes
Snohomish strongly supports the categorical exclusion of Local Distribution Networks from the BES. In fact, for reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all

facilities used in the local distribution of electric power. LDNs are, of course, probably the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. But providing an exclusion for radials without providing an equivalent exclusion for LDNs will have the opposite effect, to the ultimate detriment of electric consumers. Snohomish also supports, with the reservations discussed below, the LDN exclusion as drafted by the SDT. At least conceptually, we believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. Although Snohomish supports the LDN exclusion, we believe the exclusion should be refined in the following respects: • The SDT's draft states that: "LDN's are connected to the Bulk Electric System (BES) at more than one location SOLELY to improve the level of service to retail customer Load." (emphasis added) We are concerned that the use of the term "solely" implies the need for an examination of the motives of a local distribution utility in connecting to the BES at more than one location. This result is problematic because it defeats the purpose of the exclusion, which is to allow LDNs to be excluded from the BES without an in-depth and expensive inquiry into the exact nature of the LDN. In addition, the local utility may have a number of motives for connecting to the BES at more than one location, but the local utility's motives have nothing to do with how the LDN interacts with the interconnected bulk system, which should be the key determinant in including or excluding any Element from the BES. With these concerns in mind, we therefore recommend that the SDT revise the sentence quoted above as follows: "LDNs are connected to the Bulk Electric System (BES) at more than one location to improve the level of service to retail customer load and not to accommodate bulk transfers of power across the interconnected bulk system." By instituting this suggestion, the SDT would emphasize the key difference between an LDN, which is designed to reliably serve local, end-use retail customers, and the BES, which is designed to accommodate bulk transfer of power at wholesale over long distances. • We believe the characteristics specified by the LDN in subsections (b) and (c) of the exclusion are redundant. Subsection b specifies that the LDN would not interconnect more than 75 MVA of generation in aggregate. Subpart c specifies that power flows only into the LDN. We believe the SDT can eliminate subpart b of the definition and simply rely on subpart c because if power only flows into the LDN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system, only with the LDN. Further, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LDN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the subpart c criteria, would be wholly absorbed within the LDN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. In addition, the 75 MVA criterion would make an LDN interconnecting more than 75 MVA part of the BES. For the reasons set forth by the Project 2010-07 SDT, we are concerned the result will be the local utility being improperly classified as a Transmission Owner and Transmission Operator, which would subject the local utility to a number of reliability standards that would significantly increase its compliance burden without substantially improving bulk system reliability. In fact, in the LDN situation, there is even less reason to impose these burdens on the local utility than in the situation addressed by the Project 2010-07 team, where generators are interconnected to the BES by dedicated interconnection facilities. Because the LDN is interconnected at multiple points, the generators interconnected to the LDN could continue to operate even if one or two interconnection points are out of service. On the other hand, in the situation addressed by the Project 2010-07 team, if the dedicated interconnection facility is out of service, the generation is unavailable because there is no alternative route to deliver it to load. Finally, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT's wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception.

Yes

Snohomish County PUD supports the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that can ill afford the substantial costs that accompany imposition of mandatory compliance with reliability standards. Further, we agree that the small utilities covered by the exemption will have no measurable impact on the operation of the

interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

While Snohomish County PUD agrees that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing most local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed at greater length in our answer to Question 1, Snohomish believes that the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES. To give a further example, assume that a local distribution utility operates a distribution network that currently would be excluded from the SDT's definition, but that a cogeneration facility with a capacity of 30 MVA and average production of 15 MW is constructed in one of the industrial areas served by local distribution facility and the output is purchased by one of the industrial customers. Because of inclusion I2, the local utility would now be classified as owning BES facilities, even though the output of the generator rarely exceeds 20 MW in practice and the output is, as a matter of physics, absorbed by the surrounding industrials loads rather than being transmitting onto the interconnected grid. Further, the fundamental nature of the local distribution facilities has not changed. They are still used to deliver electric power to the utility's end-use customers, not to deliver power on the wholesale market across the interconnected bulk grid. Hence, the result of the SDT's definition is to include "facilities used on the local distribution of electric energy" in contravention of FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). The practical result of the improper classification would be that the local utility would be required to register as a Transmission Owner and Transmission Operator, and would incur substantial costs to comply with requirements that are designed to ensure the reliable operation of transmission lines that are part of the interconnected grid, not local distribution facilities. For the reasons explained in the papers published by the Project 2010-07 Task Force, the result is substantially increased compliance costs that produce little or no improvement in the reliability of the interconnected bulk system. Accordingly, if viewed in isolation, the SDT's core definitions and list of inclusions/exclusions do not comply with the statute or produce optimum benefits for bulk system reliability. Whether the SDT's approach complies with the statute can only be determined by examining the Exception process now under development, in conjunction with the SDT's definition. If the Exception process results in the exclusion of facilities that are improperly swept into the BES by the bright-line thresholds included in the SDT's definition, and the Exception can be attained at a reasonable cost to the involved entities, then the SDT will have achieved a result that complies with the statute. But this conclusion can be reached only upon review of the entire package, not just the core definition and list of inclusions/exclusions. In this regard, as discussed in our answer to Question 3, Snohomish notes that exclusion of facilities from the BES does not mean that owners of those facilities are entirely exempt from reliability standards. On the contrary, the statute provides that "users" of the BES can be subject to reliability regulation. 16 U.S.C. § 824o(b). Hence, even where an entity does not own BES assets, it could be required to, for example, provide necessary information to the applicable Reliability Coordinator and to participate in the regional Under-Frequency Load Shedding program by setting the UFLS relays in its Local Distribution Network at the appropriate settings. We note that participants in the WECC BES Task Force generally agreed that appropriate information should be provided by non-BES entities, although there was considerable concern related to ensuring that the provision of information was not unduly burdensome.

Yes

As noted in our responses to Question 1 and Question 11, we believe the SDT proposal is potentially in conflict with the limitations of the Federal Power Act, and in particular the statutory exclusion for facilities used in the local distribution of electric energy. Unless the SDT adopts some approach other than a core definition with inclusions and exclusions based on brightline thresholds, the SDT's approach can meet the statutory requirements only if the Exception process currently under development results in facilities that are not properly classified as BES being exempted from regulation as BES facilities.

Snohomish County PUD has these additional concerns: • We are concerned that the proposed 24-

month delay in the effective date of the new definition will delay the potentially beneficial effects of the SDT's efforts, especially for utilities that have been inappropriately registered for BES-related functions, which is a common situation in WECC. We therefore urge the new BES definition to become effective immediately upon approval by FERC or other applicable regulatory agencies. Entities that have been improperly registered for BES functions can then immediately file for deregistration and obtain the benefits of the new definition as soon as possible. For entities that have not previously been registered for BES-related functions but that would be required to register under the new definition, we do not object to the 24-month transition period proposed by the SDT to allow the newly-registered entity to attain compliance with newly-applicable reliability standards, many of which require new training for employees, new maintenance procedures, and complex new operational protocols. However, the transition period for newly-registered entities should be structured in a way that does not prevent entities seeking deregistration from benefitting from the new definition at the earliest possible date. • The current definition provides that "Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process." Snohomish is concerned that the SDT carefully delineate which entity has the burden of proof in the exclusion process. The WECC BES Task Force approach, which we commend to the SDT, laid out these burdens in some detail. Under that approach, essentially, if a facility is excluded from the BES by virtue of the specific exclusions listed in the definition, the Regional Entity bears the burden of proving that the facility nonetheless has a material impact on the interconnected bulk transmission system and therefore should be included in the BES. On the other hand, if a facility is classified as BES by virtue of the list of inclusions set forth in the BES definition, it can still escape classification as BES, but bears the burden of demonstrating that its facility has no material impact on the interconnected transmission system. We urge the SDT to give careful consideration to these burden-of-proof questions and to follow the lead of the WECC BES Task Force. • For the reasons we have explained in our answer to Question 11, we believe the Exception process is critical both to ensure that the BES definition is effective in producing measurable gains to bulk system reliability and to ensuring that the definition will comply with the limitations Congress placed in Section 215. Hence, we believe the entire BES definition, including the Exception process and related procedures, should be vetted through the NERC Standards Development Process, including the full comment periods and a ballot approvals provided for in that process. We are concerned that important elements of the BES definition have been assigned to the Rules of Procedure Team, and that changes in the Rules of Procedure are subject to approval in a process that provides considerably less due process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). Accordingly, we urge that all elements of the BES definition, including those elements that have been assigned to the Rules of Procedure Team, be vetted through the Standards Development Process. Further, we believe that the failure to vet all material elements of the BES definition through the Standards Development Process would constitute a violation of NERC's bylaws and the requirements of the Standards Development Process.
Group
Public Service Enterprise Group LLC
Mikhail Falkovich
No
There is still room for misinterpretation of the BES boundaries. The BES definition has ramifications affecting many standards. NERC should provide examples of what specifically is in and what is out of BES boundaries. Example one line diagrams showing "Generation Resources" included or excluded and types of radial feeds exempted should be shown. Identify what element is in BES / what is out. Suggest showing typical interconnection facilities. Addressing typical interconnection facility configurations will assist in developing a clear and concise definition that provides a precise line of demarcation between elements of the BES.
Yes
No
See comment 1 above.

Yes
No
Black start resources and the cranking path should not be included in the BES definition unless connected at 100kV and above. There are many other existing standards that impact black start units. Routine testing and redundancy is part of them. Adding in black start units < 100kV and the associated cranking path to the BES definition may discourage entities from providing black start capability due to cost associated with cumulative testing and record keeping criteria. This may result in withdrawing the offer to provide that service and/or potentially drive up the cost of that service significantly without any related increase in BES reliability.
Yes
No
Again, in similar comments to item 1 above, where is the BES line of demarcation between BES elements (the interrupting device itself) connecting the non-BES radial system? The term “Generation resource” is not defined and open for interpretation.
Yes
Group
National Rural Electric Cooperative Association (NRECA)
Barry Lawson and Patti Metro
Yes
NRECA believes the definition should explicitly state that facilities used in local distribution are excluded from the BES.
Yes
Yes
Yes
No
This is the only part of the BES definition and inclusions/exclusions that specifically states “regardless of voltage.” NRECA does not believe it is appropriate for the BES definition to include such a statement. This issue needs to be addressed in standard applicability language, not in the definition of BES.
Yes
Yes
NRECA requests that the drafting team state explicitly whether the automatic interruption device is included or excluded from the BES. Examples of automatic interruption devices should be included in a reference or FAQ document, and drawings/diagrams on typical configurations would be beneficial. Consistent language is needed in the Inclusions/Exclusions. E1 states “automatic interruption device” and E3(a) states “automatic fault interrupting devices.” NRECA recommends adding the word “fault” as in E3(a) and also stating “device(s)” in E1 and E3(a) and wherever else the phrase may be used in the BES definition and inclusions/exclusions. Additional clarification is needed in explaining E1(c) to ensure industry understands the scenario.

Yes
Yes
Yes
NRECA agrees with this approach, but also believes this could be addressed in the Statement of Compliance Registry Criteria document.
No
NRECA believes the definition should explicitly state that facilities used in local distribution are excluded from the BES.
Individual
Nicholas Winsemius
Grand Haven Board of Light and Power
No
The Grand Haven Board of Light and Power (GHBLP) does not agree that the core definition for the BES use a “bright line” definition of 100kV and above. Currently, we have a 138kV/69kV transformer that connects to the BES and serves a radial, load serving system. This transformer is presently protected by a “ground switch” relay scheme. We have a project in process that is replacing this “ground switch” relay scheme with a circuit switcher. The circuit switcher, unlike the ground switch, would not affect the BES if it were to operate. By this “bright line” definition this single asset would be defined as a part of the BES. The cost that our organization would incur from being forced to register as a Transmission Owner and Transmission Operator (TO/TOP) would be extreme, and would significantly impact our budget and our customer’s rates. We should not have to depend on an “exclusion” process to remove this asset from being defines as a part of the BES, and this should be addressed in the core definition.
Yes
Yes
Yes
Yes
Yes
No
Exclusion E1 addresses a radial, load serving system, but it does not address whether the automatic interrupting device should be defined as a part of the BES or not. In our case, the ONE automatic interrupting device that we own would force us to register as a TO/TOP, and as a result incur significant costs. This does not comply with FERC Order No. 743 (and No. 743a) and should be addressed in this exclusion if not in the core definition.
Yes
Yes
No
We agree with addition of Exclusion E4, except that it should apply to small load serving distribution utilities even if they are required to register as a Distribution Provider and Load Serving Entity. In our last fiscal year, July 2009 through June 2010, the Grand Haven Board of Light and Power served

262,847 MWh and peaked at 54 MW. Even though we are required to register as DP/LSE, we are still a small utility. Please revise the definition of a small entity for the purpose of this exception to use more reasonable criteria.
No
The exclusions do not properly address the exclusion of single automatic interrupting device that serves a radial, load serving system and, through its operation, does not affect the BES.
Yes
This current definition does not comply with FERC Order No. 743 (and 743a) by not addressing the exclusion of a single automatic interrupting device that serves a radial, load serving system.
I can not over emphasize how unreasonable it would be for our utility to have to register as a TO/TOP because of one asset (138kV circuit switcher) that serves a radial, load serving system. It is equally unreasonable for us to have to use a long and arduous exception process to qualify for deregistration. Please take this into consideration as you prepare the final definition.
Individual
Josh Dellinger
Glacier Electric Cooperative
No
I still feel that a bright-line of 200 kV would be more appropriate, with language stating that certian significant elements operated below 200 kV would be included. However, I believe the exlusion process is definitely a step in the right direction.
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
No
I agree with the approach, but not the language. I believe the small utility clause should be taken out and this Exlusion should be applicable to any transmission elements whose connection to the BES is soley through a single transmission source and without interconnected generation, regardless of the size of the utility.
Yes
I do believe that the language in its plain sense does exclude local distribution systems, but I do see the possibility of differeing interpretations of the language across the regions again. Perhaps adding some example system diagrams showing what would and would not be included in the BES would help alleviate any possible ambiguity and increase consistency across the regions.
No
No
Individual
Russ Schneider

FHEC
Yes
Generally agree, but think E1 should be changed slightly to: From: E1 - Any radial system which is described as connected from a single Transmission source originating with an automatic interruption device and: To: E1 - Any radial system which is described as connected from a Transmission source originating with a single automatic interruption device and:
Yes
Believe that the NERC Statement of Compliance Registry Criteria should be revised to reflect only thsese inclusions and exclusions. An entity with no assets that meet this definition should be allowed to de-register.
Yes
Yes
Yes
Yes
No
Suggest the word single be moved later in the sentence, see below- From: E1 - Any radial system which is described as connected from a single Transmission source originating with an automatic interruption device and: To: E1 - Any radial system which is described as connected from a Transmission source originating with a single automatic interruption device and:
Yes
Yes
We support the current wording of E3.
Yes
this begs the question of the Statement of Compliance Registry Criteria being updated also.
No
Not until the Statement of Compliance Registry Criteria is conformed to this proposed definition.
No
Individual
Kim Moulton
Vermont Transco
Yes
It appears that the SDT has made progress in addressing comments made to date. Concerned that facilities below 100 kV will fall into the current definition of BES. If changes in the wording better identified key areas the new definition would be easier to interpret, apply, and it would better align with the concerns of the members
Yes
This inclusion's wording allows an entity to easily identify which of its transformers will be included as BES and also adheres directly to the FERC identified 100kV or higher equipment. Question: if a transformer does not have two windings of 100 kV or higher but does have protection devices that could open the BES system, e.g. due to a low-voltage failed breaker scenario, would the protective devices be part of the BES even though the transformer itself is not?
Yes
How will generating owners currently registered as a GO/GOP and have units tied to the BES system through a radial transmission line, that they own, and connects them to the grid be affected by the

new definition? Will they need to become TO and TOP registered also? Should a GO/GOP have to adhere to all TO/TOP standards and requirements or only a sub-set of requirements?
No
What is the definition of “common bus”? Would this only apply to generating facilities with a direct GSU tie to the 100 kV, and up, system? Or would it apply to those units tied to the low side of a transformer at a voltage below 100 kV that has a step up high side voltage greater than 100 KV? Example: units are tied through to a single 46 kV substation (GSU high side connected to this substation) with a tie from this substation to the BES through a step up transformer.
No
: The phrase “regardless of voltage” is a concern. The goal of the FERC order is to provide a more reliable “bulk power system”. Many blackstart resources are at voltages well below the 100 kV voltage and are not material to the restoration of the bulk electric system during a blackout. The wording of this inclusion would require many units that are used only for local area support to now be listed as a BES facility. The wording of this inclusion should be something to the order of “Blackstart Resources and the designated blackstart cranking paths identified in the transmission operators restoration plan that are necessary to restore the BES system”, this should not include cranking paths on distribution feeds that are used primarily for local area support. The purpose of this inclusion should be to make certain all units necessary to energize the BES grid after a blackout are maintained and operated appropriately
No Comment
No
Does “a single transmission source” mean a single “substation” at 100 kV or above? The wording of this exclusion appears to allow distribution (<100 kV) level generating units to be excluded from the definition of BES. If so then this generation exclusion is appropriate to the FERC order. However, the definition of “automatic interruption device” should be defined fully. Specifically what types of equipment are considered an AID? If a transformer has a high side voltage of 115 kV and a low side voltage of 34.5 kV it would not be part of the BES definition, however depending on how one interprets the exclusion for a radial feed, if the transformers automatic interruption device were on the low side of this transformer, it appears that this transformer would then need to be “included” as BES. In addition, would the protection schemes associated with the breaker failure on the low side of a transformer (voltage <100 kV) designed to send a signal to the high side (which is greater than 100KV) for a breaker failure scenario fall into the “included” facilities even though the transformer would not be “included”?
No Comment
No Comment
The exclusion wording is difficult to understand and apply. Are their voltage levels where this would not apply (ex. 230 kV) or load levels that would be seen as too high? Cannot agree or disagree due to the wording
No
The inclusion of all black start units “regardless of voltage”, the unclear definition of “automatic interruption device” and “common bus” could lead to local distribution company facilities being included in the definition of BES.
No
No Comment
No additional comments
Group
Northeast Power Coordinating Council
Guy Zito
No
The core definition should be revised to read: Bulk Electric System (BES): All Transmission Elements operated at 100 KV or higher, unless such designation is modified by the list shown below. The resulting modified BES shall comprise all Elements deemed necessary for operating an interconnected electric energy transmission network, but shall exclude any Elements used in the local distribution of electric energy. The inclusion and exclusion requirements are restrictive. For example, radial

characteristics should not be limited by the amount of installed generation or single transmission source and/or require an interrupting device. Instead, one or more transmission sources could feed the radial load to provide redundancy as long as there is adequate protection and isolation for improved customer-supply continuity and reliability. This would be considered radial as long as the loss of any transmission source would not affect, and is not necessary for the operation of the interconnected transmission network. This retains the incentive to build transmission. The revised definition will have a direct impact on entities across North America and may conflict with regulatory requirements, Codes, and Licenses. FERC in its Order 743 and 743A has directed NERC to address these concerns. Include provisions in both the NERC exception criteria and exception process for federal, state and provincial jurisdictions. These provisions should provide clear guidance so that, if and when there are deviations from the exception criteria, they are properly identified with technical and regulatory justifications ensuring there is no adverse impact on the interconnected transmission network. This burden of proof should be left to the entity seeking exception because it may be difficult to define the exception criteria. Further, if such an explicit criteria could be defined, it could become another bright-line BES.

Yes

No

I2 should pertain to individual generating units, but the entire path should not be labeled as BES. Oftentimes there are cases when neither the path nor a 20 MVA unit itself will have any impact on the reliability of the interconnected transmission network, nor is it necessary for its operation. The path to generating facilities does not need to be BES contiguous. Generating units can be required to be planned, designed, and operated in accordance with a subset of NERC Standards, but should not require a contiguous path unless the unit is identified essential for the operation of transmission network.

No

I3 should pertain to multiple generating units located at a single site, but the entire contiguous path should not be labeled as BES. Oftentimes there are cases when neither the path of a 75 MVA plant or aggregated generation will have any impact on the reliability of the interconnected transmission network nor be necessary for its operation. As stated earlier, under various green energy, smart grid and dispersed renewable energy plans advocated by both Canadian and US policy makers, the gross nameplate rating of 75 MVA may undermine and deter the future potential of integrating Distributed Generations (DG's) that will be implemented to ensure the reliable operation of the interconnected transmission network BES, and, at the same time, providing the most effective and economical solutions for rate payers. Local generation can cost-effectively enhance the reliability of load pocket by avoiding transmission, but such restrictions would deter the adoption of good planning decisions. Path to generating facilities need not be BES contiguous. Generating units can be required to be planned, designed, and operated in accordance with a subset of NERC Standards, but should not require contiguous BES paths.

No

Blackstart resources and transmission facilities on the cranking path should not be classified as BES regardless of size and voltage level. From a regulatory perspective, such an inclusion would be in conflict with the current regulatory requirements in many jurisdictions. More importantly, designating these facilities as BES Elements or Facilities beyond the 100 kV bright line, the 20 MVA/unit or 75 MVA/plant criteria, without a regard to their impact on the BES (under conditions other than system restoration) will impose unnecessary requirements for these facilities, which do not contribute to reliability under interconnected operation conditions. For a restoration condition, this inclusion is extraneous. There is already a designation specific for system restoration covered by an existing standard to recognize their reliability impacts and to ensure their expected performance. NERC Standards EOP-005-2 stipulates the requirements for testing blackstart resource and cranking paths. This testing requirement suffices to ensure that the facilities critical to system restoration are functional when needed, which meets the intent of identifying their criticality to reliability. The BES definition should cover those facilities that are needed for operation under both normal and emergency conditions, which includes situations related to blackstart and system restoration. The directives should not specifically ask for inclusion of blackstart resources and facilities on the cranking path in the BES definition. The requirements in EOP-005-2 suffice to address the SDT's interpretation

and concern regarding recognition of the reliability impacts and requirements for blackstart resources and facilities used for system restoration. Generating units of any size and transmission facilities of any voltage level may be used for black start and restoration. Conceivably, a generator of 10 MW and transmission or distribution facilities of 44 kV or 69 kV may be a part of the cranking path. A BES inclusion will then subject these generators and facilities, which are essentially “local” facilities but called upon to begin restoring its bulk interconnected counterparts, to comply with the reliability standards intended for maintaining BES reliability. Included in the BES definition will thus discourage smaller generators from providing black start capability, and the transmission facilities from being a part of the cranking path. This may also discourage Transmission Owners and Operators from identifying multiple black start resources and cranking paths to provide restoration flexibility. Such an inclusion will ultimately undermine reliability. If indeed any of these facilities are deemed necessary to support bulk power system reliability at times other than system restoration, they would/should have been identified through the basic BES definition and inclusion list or can be addressed through the exception procedure. I4 should be removed based upon: • The availability and performance expectations of blackstart resources and facilities on the cranking path are already specifically addressed in an existing standard; and • Unless they meet the BES definition and the other inclusion criteria, they do not have any perceived reliability impact on everyday operation of the BES. • I4 may include very small generators and distribution facilities as it is written. Is it necessary from a reliability point of view to include “cranking paths” below 100kV?
No
The entire contiguous path does not have to be BES. The path or aggregate generation will rarely have any impact on the reliability on the interconnected transmission network, nor is it necessary for its operation. These are generally referred to as connection facilities.
No
The concept is consistent with the statements in the FERC Order. However, it is imperative to understand that the limitations of E1 will have a direct impact on many entities (big and small) along with distribution companies across North America. The exclusion requirements are restrictive and these restrictions mayhave an adverse affect on future transmission investment, for example the addition of a second line removing the radial status exclusion. Consideration should be given to allowing entities to build additional transmission and not automatically compromise the exclusion status of any given facilities. For example, a redundant double circuit designed to supply the load with adequate protection and isolation beyond the radial tap could be significantly better for load supply-continuity and reliability. If more than one transmission source feed radial load to ensure customer supply continuity and reliability, then this should be either part of the bright-line definition E1 exclusion as long as there is adequate protection and, the loss of any single transmission source does not affect the interconnected transmission network. The SDT should: • Carefully craft the exception criteria and procedure that is flexible and technically sound to adequately allow entities to present their case to the ERO for exclusion • Exception criteria should be at a high-level with items of assessment that can be followed continent-wide by entities to put forward their exception for element(s) mentioned in exclusions or inclusions based on technical assessment, evidence and justification for its unique characteristics, configuration, and utilization • Acknowledge and provide provisions in both NERC exception criteria and exception process for federal, state and provincial jurisdictions.
Yes
No
Regarding E3.a.--If the supply to a LDN is tapped off a Bulk Electric System facility, and the step down transformer is protected on its high side by a fault magnitude supervised automatic interrupting device (such as a circuit switcher), how does that affect the exclusion? The circuit switcher will only interrupt faults up to a certain magnitude. Above that threshold, depending on the system configuration, fault clearing might have to be done at the Bulk Electric System facility. Regarding E3.d.--The LDN cannot be used to transfer real or reactive power under all operating conditions. Suggest combining E3.c and E3.d to read as follows: Power is intended to flow only into the LDN. The generation within the LDN shall not exceed the electric real or reactive power demand within the LDN. The LDN only delivers real or reactive power to load, and is not to be used to transfer real or reactive power between different locations in the BES. Under no system condition is BES reliability to be

dependent on LDN flow.
No
Small utility or distribution provider is a relative term. A distribution provider may have an impact on the transmission network based on its design, configuration, connection point, and protection. Such an exception should apply regardless of the size of an entity. The concept discussed here is to define a radial system and not a small utility, as mentioned in the FERC Order. We do not believe that the SDT had sufficient discussions while crafting the proposed exclusion in regards to small utilities. The language used in the proposed clause is only appropriate to establish a bright-line definition for a radial system. Many small utilities (and individual load customers or generation connections) have more than a single transmission source with a solid tap and, at the same time, be adequately protected and effectively isolated without any adverse impact on the transmission network. Such a practice and design is widely used across North America. Hence, we do not agree that this exclusion is an attempt to address the issue of small utilities. The definition and inclusions will force many small entities, load customers and generation unit owners to act and register as Transmission Owners. This may be in conflict with state or provincial regulatory act, Codes and Licenses. Consistent with the FERC Order, the ERO and the SDT should be aware of these conflicts and should not ignore them. The ERO and the SDT address this by providing explicit but simple provisions in the exception procedure by considering sound technical exception criteria that is flexible based on demonstration of evidence to justify the element's necessity for operation. Regulatory Acts and Rules will always overrule NERC requirements and the only evidence that should be required of small utilities/entities is: • Regulatory evidence • Evidence demonstrating that NO adverse reliability impact is afflicted on the interconnected BES because of their connection.
No
The current definition drafted by the SDT has not differentiated between Transmission and Distribution, nor excluded distribution facilities from the BES, nor addressed the issue of local distribution facilities above 100kV. It is important for the ERO and the SDT to understand and be consistent with the FERC Order for these important but complex issues. Many parts of the continent could be in conflict with state or provincial regulatory act, Codes, and Licenses. The ERO and SDT and RoP teams be aware of these conflicts and not disregard them, as they will pose many implementation complexities and confusion within the industry. Regulatory Acts and Rules will always supersede NERC requirements and hence it is important that ERO should neither be caught in regulatory conflict nor put entities in these situations. As responded to in Question 10, the ERO and SDT can address this by providing explicit but simple provisions in the exception criteria (to be used by exception procedure) by putting forward required technical assessments , which are based on a demonstration of evidence to justify the element's necessity for operation. For example, suggest that for local distribution, the evidence that should be required is: • Regulatory evidence • Evidence demonstrating that NO adverse reliability impact is afflicted on the interconnected BES because of their connection Some of the other key attributes of such an exception criteria should be: • Elements are not to be part of interconnection between two balancing authority or contribute to IROLs • Entire system cannot be classified as contiguous • Entity to justify whether or not the elements are necessary for the operation of the interconnected transmission network • Distinguish if the element in question supplies load centers, major cities, serves the national interest and/or possibly impact national commerce or national security, or is identified by the relevant regulatory authority Accordingly, the exception criteria should ONLY list a menu of items and a prescribed report template that should be assessed and presented by an entity as their evidence and justification for exception to a RE, the ERO and any relevant regulatory authority. This evidence and justification would be used by the ERO as part of its decision making process.
Yes
The proposed definition will have a direct impact on entities not under FERC jurisdiction, and may be in conflict with regulatory requirements with which those entities must comply.
Currently, the posted exception criterion is only a concept with many gaps and TBD, as posted details are later to follow. The exception criteria should be a menu of technical items (load flows, stability analysis etc) and non technical items (type of loads such as distribution companies versus major city center, national security, etc). Entities should be required to assess and provide their own justification under each category with a conclusion that takes into account all of the relevant items for element(s) under exception, in a consistent template and table of contents. Suggest the SDT to avoid specification of any parameters as they would differ under different design concepts, system

configurations, system characteristics and regulatory requirements. The comments herein reflect thoughts on the document posted. An “all encompassing” comment is that the definition is too lengthy. The importance of the BES definition is recognized throughout the industry for its importance, and as such it should be simple, clear, and straightforward. The first draft definition posted was more along this line. I2, I3, and I5, being very similar, can they be combined into an encompassing generator inclusion criteria?
Individual
Richard McLeon
South Texas Electric Cooperative, Inc.
Yes
There is general confusion as to whether or not the “BES” is synonymous with the “BPS”. If this is so, then it should be expressly stated as such. If not, clarification should be provided to industry.
Yes
Yes
Yes
Yes
Yes
No
I agree with everything up to “…but is not required to register…by the ERO”. There are many small utilities that fit into the scope and spirit of the exclusion BUT were required to register as DP and/or LSE by their ERO. This has generally been on the interpretation of “better safe”. Please remove the language which gives this discretion to the ERO and insert language allowing already registered small utilities with have their registrations revoked or surrendered.
Yes
I agree, but believe that those distribution companies that were forced to register as LSEs under FERC interpretation should be excluded as well.
No
Group
Tri-State Generation and Transmission Association, Inc.
Bill Middaugh
No
The Northeast Power Coordinating Council stated that “Step-down transformers with the low-side terminals serving non-BES facilities, which are serving a distribution function, should not be part of the definition of BES.” The drafting team stated that it agrees with the comment, but the implementation uses the term local distribution network, which is different than a step-down transformer. Transformers are addressed in the answer to the NPCC comment 2, but uses the ambiguous “single Transmission source” phrase as a requirement to determine BES status. Other specific comments are below.
No
We recommend changing I1 to the following: “Only transformers, including phase angle regulators, with two or more windings of 100 kV or higher that are connected through automatic fault-

interrupting devices, unless excluded under Exclusions E1 and E3." "Only" is required to prevent a regional interpretation that includes distribution transformers since they are never specifically excluded. The phrase regarding GSUs is removed since they are covered in I2 and I3.
Yes
Yes
Yes
Yes
No
A "single Transmission source" is unclear and may be interpreted differently by different Regional Entities. A circuit switcher-protected transformer serving only distribution load may be tapped to a single transmission line but the transmission line has two or more sources. Is the system then connected to a single Transmission source, thus making it radial and being excluded? Or will the Regional Entity declare that, since the transmission line has two sources that the radial system also has two sources? We suggest changing the opening sentence of Exclusion E1 to "Any radial system that is connected to a Transmission source through an automatic interrupting device or devices and:"
No
This Exclusion should also include "wholesale" meters for the instance where an electric distribution cooperative has some small generation connected to its distribution system that meets the same criteria.
No
We believe that element c. needs to be changed to : "Power flows only into the Local Distribution Network, even under all contingency conditions that are considered under any TPL standard requirement dealing with transmission system performance: The generation within the LDN shall not exceed the electric Demand within the LDN;"
No
We disagree with adding E4. This issue should be resolved by enhancing the NERC Statement of Compliance Registry Criteria, not by integrating registration exemptions in NERC definitions.
No
See the comments to Question 7.
No
We believe that this definition is not consistent with the response from the SPCS in Project 2009-17, "Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State" and could change its intent. Existing tapped distribution transformers are clearly not BES Elements at this time. Under the proposed definition that clarity is lost. There are instances where "automatic interruption device" or "automatic interrupting device" is used. Each should be changed to include "fault" after "automatic."
Individual
Angela Gaines
Portland General Electric Company
The bright-line definition of 100kV should specify that this is a three-phase line-to-line voltage.
Yes
The reference to "two windings" will cause confusion. Presumably the Standard Drafting Team means two three-phase windings, which would mean that both the high sides and the low sides of a typical transformer bank would have to be operating at 100kV and above in order to be part of the BES. In other words, a 230kV/57kV transformer would not be included, despite the fact that all three windings that make up the high side are individually rated at over 100kV. The inclusion needs to make clear that it's talking about two or more sets of windings, each set consisting of three phases.
No

The 20 MVA gross nameplate rating threshold for an individual unit is too low and will result in the inclusion in the BES of generating units that have no potential to impact the reliability of the BES. The 20 MVA threshold was taken from the registration criteria, and no technical justification has been provided for its use. PGE recommends that this inclusion be removed entirely.
The 75 MVA aggregate capacity rating threshold could result in the inclusion in the BES of generating units that have no potential to impact the reliability of the BES. The 75 MVA threshold was taken from the registration criteria, and no technical justification has been provided for its use. In addition, the meaning of the phrase “located at a single site” is unclear and subject to multiple interpretations. The phrase “connected through a common bus” accomplishes the same goal, and therefore the phrase “located at a single site” should be removed.
Yes
It is not clear what the SDT is attempting to capture with this inclusion that is not already captured in I3. In addition, the term “collector system” needs to be defined.
Yes
Yes
While PGE appreciates the SDT’s efforts to exclude distribution systems, as required by the statute, PGE believes that this Exclusion needs further clarification to be workable. PGE has specific concerns with the following aspects of the Exclusion: (b) The phrase “nor its underlying Elements (in aggregate)” is ambiguous. It does not make it clear how a utility could differentiate between the multiple Local Distribution Networks within its service territory. (c) The phrase “Power flows only into the Local Distribution Network” does not make clear that under certain abnormal circumstances power may flow out of a Local Distribution Network. Wording such as “the predominant direction of flow is into the Local Distribution Network during normal (non-outage) conditions” could account for such abnormal circumstances. (d) The phrase “Not used to transfer bulk power” should similarly be modified to indicate that it is meant to describe normal rather than abnormal conditions. In addition, this aspect of the Exclusion should account for the fact that two utilities may have multiple interchange points at the distribution level, but the fact that energy is transferred at these points does not inherently make them transmission paths. A phrase such as “none of the LDN facilities are identified as belonging to or having direct rating impact on a regionally-recognized constrained transmission path used to deliver energy to points outside of the LDN” could address this concern.
As stated above, PGE believes that the Exclusion for Local Distribution Network needs to be more explicit.
Individual
Richard McLeon
South Texas Electric Cooperative, Inc.
Yes
There is general confusion as to whether or not the “BES” is synonymous with the “BPS”. If this is so, then it should be expressly stated as such. If not, clarification should be provided to industry.
Yes
Yes
Yes
Yes

Yes
Yes
Yes
Yes
Yes
There are many small utilities that fit into the scope and spirit of the exclusion BUT are currently registered as a DP and/or LSE. Will this exclusion remove them from registration OR should language be inserted that automatically revokes the NERC registrations of “already registered” small utilities. I recommend that any such revocation be handled by NERC and NOT by the various EROs for the sake of consistency.
Yes
I agree, but believe that those local distribution companies operating below the bright-line that were forced to register as LSEs under FERC Order on Compliance Filing (October 16, 2008) should be excluded as well. For example, BAL-005-0.1b, CIP-001-1a, EOP-002-3 and others do not apply to DPs but affect small local utilities as LSEs. If, according to FERC Order 743 a small local distribution utility would be rightly excluded from DP standards, then, by the same logic and as a distribution-level LSE, they should be excluded from LSE standards as well. If an operating system voltage below 100kV is too low to affect the BES/BPS, then it stands to reason that their connected load is too small as well. If not – then another bright-line should be established in the spirit of FERC Order 743 to differentiate between power flow across the BES/BPS and power flow to end-use consumers.
No
no.
Individual
Michael Albosta
Sweeny Cogeneration LP
The specific identification of global inclusions and exclusions is a very good way to approach this complex issue. We believe there are further items to be added to the list related to generator interconnections, a task that was passed to this project from Project 2010-07. Just as is the case with complex distribution systems, there are a variety of generator-transmission interconnection architectures which are driving the Regions to inappropriately register Generator Owner/Operators as Transmission Owners.
Yes
Transmission system transformers are not part of our existing or anticipated base of facilities.
No
The threshold for individual generation units is consistent with the NERC functional registry criterion. We believe that it is important to maintain this uniformity. However, we believe there are further items to be added to the list related to generator interconnections, a task that was passed to this project from Project 2010-07. Just as is the case with complex distribution systems, there are a variety of generator-transmission interconnection architectures which are driving the Regions to inappropriately register Generator Owner/Operators as Transmission Owners.
No
The threshold for multiple generation units aggregated at a single location is consistent with the NERC functional registry criterion. We believes that it is important to maintain this uniformity. However, we believe there are further items to be added to the list related to generator interconnections, a task that was passed to this project from Project 2010-07. Just as is the case with complex distribution systems, there are a variety of generator-transmission interconnection architectures which are driving the Regions to inappropriately register Generator Owner/Operators as Transmission Owners.
We do not operate any Blackstarts

Yes
The threshold for widely distributed and aggregated generation units (wind farms) is consistent with the NERC functional registry criterion.
Yes
We agree that all radial connections serving a single load, small generator, or combination should be excluded
No
Generators which serve local retail load (cogeneration) should be excluded if the net capacity available to the BES does not exceed 20 MW Single Unit/75 MW Multiple Units thresholds. We believe there are further items to be added to the list related to generator interconnections, a task that was passed to this project from Project 2010-07. Just as is the case with complex distribution systems, there are a variety of generator-transmission interconnection architectures which are driving the Regions to inappropriately register Generator Owner/Operators as Transmission Owners.
Yes
Yes
No
Group
American Municipal Power and Members
Kevin Koloini
Yes
AMP and its members appreciate the opportunity to comment on the draft BES definition. We generally support the direction taken by the SDT, with some minor changes. We agree with some other entities' comments and suggest a few clarifying edits to the core definition. First, the definition should refer to “non-generator Reactive Power resources,” to make clear that although all generators provide some reactive power, those that do not meet the criteria of I2-I5 are not included in the BES. There is ambiguity concerning whether a transformer stepping down from >100 kV to <100 kV is included or not, though we believe that the SDT intends to exclude such transformers. It is clear that transformers with two windings >100 kV are included and GSUs for registered generators are included, but it is somewhat unclear in the current draft whether a 138 kV to 69 kV transformer is included or excluded. We suggests making it clear that the intent of the SDT is to include (a) GSUs associated with BES generators and (b) transformers with 2 or more windingwindings >100 kV, and that other transformers are excluded. We also believe the drafting team intended to exclude all elements that are not included either under the BES definition and designations or through the exception process. For the sake of clarity, we suggest that a sentence to that effect be added to the core definition. Finally, we note that the definition does not currently refer to the existence of the exception process. We suggest that such a reference be added either to the core definition or to the lists of Inclusions and Exclusions. The following is the core definition incorporating the changes: All Transmission Elements (except transformers) operated at 100 kV or higher, transformers as described below, Real Power resources as described below, and non-generator Reactive Power resources connected at 100 kV or higher unless such designation is modified by the list shown below. The NERC Rules of Procedure provide an Exception Process through which Elements not included in the BES under this definition and designations may be included in the BES, and Elements included in the BES under this definition and designations may be excluded from the BES. Elements not included in the BES either by application of this definition and designations, or through the BES exception process, are not BES Elements.
Yes
We support I2, but propose clarifying edits. To minimize possible confusion as to the category of transformers being addressed in I1, and the sufficiency of a single applicable Exclusion, we suggest the following rewording: “Transformers, including phase angle regulators, and not including generator

step-up (GSU) transformers, with two windings of 100 kV or higher unless excluded under Exclusion E1 or E3."
Yes
We support I2 but propose clarifying edits. We understand that the intent is to define the BES component of qualifying generators as that equipment from the generator terminals through the GSU. To convey clearly this point, as well as that only generators that are both over 20 MVA and connected through a GSU with a high side voltage of at least 100 kV are included in the BES, I2 should be reworded as follows: "Individual generating units greater than 20 MVA (gross nameplate rating) including the generator terminals, connected through a GSU that has a high-side voltage of 100 kV or above. A BES generator includes the equipment from the generator terminals through the GSU."
Yes
I3 contains language similar to I2, and should be similarly reworded, as follows: "Multiple generating units located at a single site with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating), connected through a common bus operated at a voltage of 100 kV or above. A BES generating plant includes the equipment from the generator terminals through the respective GSUs."
No
We recommend that the SDT exclude Blackstart Units under 20MW and Blackstart Units that are connected via their GSU to Non-BES Facilities (under 100kV). We believe this would be a minimal impact on the existing Restoration Plans while increasing the reliability and viability of these Restoration Plans since the industry would be forced to use only BES facilities as defined by NERC BES definition. This would force all Blackstart Units to be compliance with all Reliability Standards if this change is implemented.
No
There is concern over inadvertently including small distribution that has behind-the-meter generation on a 69 kV loop. We somewhat agree with the concept of Inclusion I5 but suggest a language change to clarify what we understand to be the drafting team's intent, that the inclusion is intended to apply to dispersed wind and solar generating plants, and not, for example, to a radially-connected city with an aggregate of 75 MW of small generators behind-the-meter. This distinction is appropriate because such a city cannot have the same impact on the grid as a 75 MW wind farm; loss of the radial connecting the city to the grid would result in loss of its load as well as its generation, so that the supply-demand mismatch would be far less significant. We suggest that I5 be revised.
No
The words "described as" should be deleted from the exclusion to avoid confusion. What matters is how the system is actually connected, not how someone describes it. In addition, "a single Transmission source" could be defined, and should be generic enough to encompass the various bus configurations. It is not the case, for example, that each individual breaker position in a ring bus is a separate Transmission source; in that case, a bus at one voltage level at one substation should be considered "a single transmission source." Some examples of configurations that should be considered a single transmission source for this purpose are at https://www.frcc.com/Standards/StandardDocs/BES/BESAppendixA_V4_clean.pdf, Examples 1-6. The phrase "automatic interrupting device" should be replaced with the phrase "switching device"." Many radials are connected to ring buses or breaker-and-a-half schemes where the breakers (automatic interrupting devices) are within the bus arrangement where the appropriate division between BES and non-BES is at the disconnect switch as the radial "takes off" from the bus arrangement.
Yes
We understand that E2 is intended to apply only to retail customers' generation. The exclusion should therefore be revised to make that limitation clear. Specifically, the first sentence should read: "A generating unit or multiple generating units that serve all or part of retail customer Load with electric energy on the retail customer's side of the retail meter." In addition, the first condition of exclusion, (i), "the net capacity provided to the BES does not exceed the criteria identified in Inclusions I2 or I3," as written is vague and could be subjectively applied. I2 limits capacity supplied to the BES to 20MVA while I3 limits that capacity to 75MVA. A better way to state the exclusion would be as follows: (i), "the net capacity provided to the BES does not exceed the retail customer's total nameplate generation, or 75MVA, whichever is greater,".

Yes
The exclusion refers to groups of Elements that “distribute power to Load rather than transfer bulk power across the interconnected system.” The use of the term “bulk power” is vague and could be read incorrectly as a reference to the “bulk-power system,” which is defined in the Federal Power Act but is not a NERC defined term. If the LDN is connected to the BES at more than one location, there will by definition be some loop flow. We recommend below that Exclusion 3(d) be revised to quantify the amount of loop flow that is permissible in an excluded LDN. In the context of the first sentence of Exclusion E3, less specificity is needed, and the sentence should only be revised for the sake of accuracy to state: “Groups of Elements operated above 100 kV that are primarily intended to distribute power to load rather than to transfer power across the interconnected System.” The exclusion’s reference to connection “at more than one location” is vague. The sentence should be revised to read “connected to the Bulk Electric System (BES) from more than one Transmission source solely to improve the level of service to retail customer Load,” and “Transmission source” should have the same meaning that it does in E1. E3(a) should require that there be switching devices between the LDN and the BES, not specifically automatic fault-interrupting devices. The term “separable by” in “Separable by automatic fault interrupting devices” is unclear and should be reworded. E3(b) To avoid pulling an LDN into the BES based on very small customer-owned generation (such as rooftop photovoltaics and hospital backup diesel generators) that the utility does not consider or rely on, or necessarily even know about, the item should be reworded: “Limits on connected generation: Neither the LDN, nor its underlying Elements (in aggregate), includes more than 75 MVA of generation used to meet the resource adequacy requirements of electric utilities.” E3(d) states “Not used to transfer bulk power.” As noted above, “bulk power” is a vague term. There will necessarily be some loop flow on a system that is connected to the BES at more than one location. The amount of permissible loop flow for this purpose needs to be determined and stated in this item.
Yes
For the sake of clarity, the final sentence should be revised to read as follows: “For purposes of this exclusion, a “small utility” is an entity that benefits from the utility of the BES, but does not meet the registry criteria to perform functions in the BES."
No
No
In Ohio, 50 MW is the threshold for siting. Although 20 MW has recently been the criteria for the BES, if there is no technical justification (a study of some kind) then we highly recommend raising the threshold for generators to 50 MVA for a single unit. In our experience, registered generators, even those that have had severe violations, have been routinely classified as not having an impact on the BES in the enforcement process. Due to this truth, we can not understand the justification for keeping such a low threshold. We suggest raising the threshold to 50 MVA for single units, unless a technical study justifies inclusion.
Individual
Michael Jones
National Grid
No
The core definition should be revised to read: Bulk Electric System (BES): All Transmission Elements operated at 100 KV or higher, unless such designation is modified by the list shown below. The resulting modified BES shall comprise all Elements deemed necessary for operating an interconnected electric energy transmission network, but shall exclude any Elements used in the local distribution of electric energy.
Yes
We would like some clarification regarding three-winding transformers, for example a 345/115/23 kV transformer. Was the intention to include the 23kV in the new definition of BES? If so, it seems likely that other 23 kV components on the buswork could be pulled into the definition of BES if it is in the zone of protection of the transformer.
Yes

Yes
No
We do not feel that blackstart resources and cranking paths should be classified as BES. In several instances, cranking paths direct the operator to pick up distribution load before moving on to the next step for stability purposes. These are non-jurisdictional distribution facilities and should not be considered BES, since they are not necessary to support the reliability of the bulk power system during normal conditions. The BES definition should cover those facilities that are within FERC's jurisdiction and that are needed for operation under both normal and emergency conditions, which may include some facilities related to black-start and system restoration, but not all. The directives should not broadly include blackstart resources and facilities on the cranking path in the BES definition. This is over inclusive. The requirements in NERC standard EOP-005-2 address the SDT's interpretation and concern regarding recognition of the reliability impacts and requirements for blackstart resources and facilities used for system restoration. For example, there could also be small generators (less than 20 MVA/unit or 75 MVA/plant) or transmission and distribution facilities of 69 kV or less, which are considered "local", that are used for system restoration in the cranking path. A BES inclusion will then subject these generators and facilities, which are "local", non-jurisdictional facilities that may be called upon to begin restoring its bulk interconnected counterparts, to comply with the reliability standards intended for maintaining BES reliability. Including these facilities in the BES definition will thus discourage smaller generators from providing blackstart capability, and the transmission facilities from being a part of the cranking path. This may also discourage Transmission Owners and Operators from identifying multiple blackstart resources and cranking paths to provide restoration flexibility. This will ultimately undermine reliability. Also, including these types of facilities in the BES definitions could lead to jurisdictional challenges that could cause uncertainty and delay the implementation of the new BES definition and divert important industry and regulatory resources. Because of these reasons, I4 should be removed from the inclusions list.
Yes
No
We feel that there might be some confusion between I1 and E1 because while I1 only includes transformers with 2 windings greater than 100kV, E1 specifically says a tap must have an automatic interruption device to be excluded. So, we are concerned that radial tapped lines with a transformer whose low-side voltage is less than 100kV, but do not have an automatic interruption device are not excluded. We would like to see some additional clarity in this exclusion to address this situation Does automatic interruption device only include breakers/circuit switchers? Would a device such as a motorized loadbreak be considered an automatic interruption device? If motorized loadbreaks are also considered as an automatic interruption device, then there would be less confusion between E1 and I1. We also request that this issue be addressed by adding clarity to the exclusion. Another concern is that this exclusion requirement is restrictive and may have an adverse affect on future transmission investment for redundant radial supply to improve local load service, for example the addition of a second line removing the radial status exclusion. Consideration should be given to allowing entities to build additional transmission without automatically compromising the exclusion status of any given facilities.
Yes
No
E3.c and E3.d – These two points can be combined into one: Power is intended to flow only into the LDN. The generation within the LDN shall not exceed the electric real or reactive power demand within the LDN. The LDN only delivers real or reactive power to load, and is not to be used to transfer real or reactive power between different locations in the BES. Under no system condition is BES reliability to be dependent on LDN flow. E3.e - We would like more clarification on flowgates and what they are. We are interpreting flowgate as the lines that make up defined operational interface, as defined by the Operations group not the Planning group. Is this the correct interpretation of flowgate?
No

This exclusion is not necessary. Many small utilities (and individual load customers or generation connections) have more than a single transmission source with a solid tap and, at the same time, be adequately protected and effectively isolated without any adverse impact on the transmission network. Such a practice and design is widely used across North America. Hence, we do not agree that this exclusion is an attempt to address the issue of small utilities. The definition and inclusions will force many small entities, load customers and generation unit owners to act and register as Transmission Owners. This may be in conflict with state or provincial regulatory act, Codes and Licenses, and may lead to jurisdictional challenges that could cause uncertainty and delay in implementing the new BES definition. Consistent with the FERC Order, the ERO and the SDT should be aware of these conflicts and should not ignore them The ERO and the SDT address this by providing explicit but simple provisions in the exception procedure by considering sound technical exception criteria that is flexible based on demonstration of evidence to justify the element's necessity for operation. The only evidence that should be required of small utilities/entities is: • Regulatory evidence. • Evidence demonstrating that NO adverse reliability impact is afflicted on the interconnected BES because of their connection.

No

We don't believe the bright-line core definition and specific inclusions and exclusions prevent distribution from being considered as BES. Actually, it seems like a lot of distribution will be considered BES according to the inclusions and exclusions. (E1 may be interpreted to include step downs if they don't have automatic interruption devices and possibly the tied through distribution system to the other step-down transformer that doesn't have an automatic interruption device from the same Transmission source) If the definition is not revised to exclude more distribution, we are concerned about how the distribution elements that will be considered BES under the new definition will be classified. The BES definition should not be used to differentiate between transmission and distribution. It is important for the ERO and the SDT to understand and be consistent with the FERC Order for these important but complex issues. There could be conflicts with state or provincial jurisdictions. The ERO and SDT and RoP teams should be aware of these conflicts and not disregard them, as they will pose many implementation complexities and confusion within the industry, and may lead to jurisdictional challenges that could cause uncertainty and delay in implementation of the new BES definition. It is important for the ERO to not put entities in situations where there is some confusion or conflict. Removing I4, the inclusion regarding blackstart resources and cranking paths, will prevent distribution from being considered as BES. Also, clarification that step downs which have one winding which is less than 100 kV but are tapped off of the BES system without an automatic interruption device are not BES could also prevent distribution from being considered as BES.

Yes

There could be some conflicts with the ISO-NE Pool Transmission Facility (PTF) definition. If something is considered non-PTF, but is considered BES with this new definition, it could lead to confusion about which criteria should be applied to these entities and potentially which tariff (non-PTF or PTF) is truly the correct tariff. We believe adding more clarity as previously mentioned in the other questions to the definition and excluding I4 and clarifying E1 will minimize these issues.

We are concerned that the proposed definition of BES and specified inclusions reaches farther into the electric system than the Bulk Power System (BPS) definition. The statutory framework of the Federal Power and section 215 specifically must govern the definition of BES. It is clear in FERC's Order No. 743 that BES should not extend further than BPS, therefore the statutory definition of BPS must be the guide for the SDT's efforts, particularly with regard to the treatment of local distribution facilities. The BPS definition includes (1) facilities and control systems necessary for operating an interconnected electric energy transmission network; and (2) electric energy from generation facilities needed to maintain transmission system reliability. It does not include facilities used in the local distribution of electric energy. The definition of BES must comply with the statutory definition. First, the facilities and control systems to be included within the BPS/BES must be necessary for operating an interconnected electric transmission network. Therefore, one question to consider for each of the proposed inclusions and exclusions is "are they necessary?" A particular facility or element should not included in the BES definition just because it would be desirable to have the facility considered BES or covered by a particular standard. Imposing a requirement that all contiguous elements be included is too broad and may sweep in facilities to the BES definition that are statutorily excluded because they are not necessary. Second, both the transmission and the generation facilities included within the BPS/BES must be tied to maintaining the reliable operation of the BPS. Section 215 defines the term

“reliable operation” as “operating the elements of the bulk-power system within equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of such system will not occur as a result of a sudden disturbance, including a cybersecurity incident, or unanticipated failure”. The statute does not require that there be no loss of load. The statute is aimed at avoiding uncontrolled separation or cascading failures. Therefore, the definition of BES should only include elements that are necessary to prevent these occurrences.
Group
Edison Electric Institute
Barbara Hindin
No
EEI believes that the entire designated cranking path should not be included in the BES definition if it would include facilities that are less than 100 kV on the path. Including such facilities may inappropriately include some facilities that are local distribution facilities, which are under state jurisdiction. These facilities might be swept into the definition of BES without an inquiry as to whether or not the facilities are “facilities used in local distribution of electric energy,” which is an explicit exclusion under the Federal Power Act definition of “Bulk-Power System.” This issue is more fully discussed in EEI’s response to Question 13.
Yes
EEI suggests that the following language more clearly expresses the intent of the SDT: Dispersed power producing resources with aggregate capacity greater than 75 MVA gross aggregate nameplate rating) utilizing a collector system from the point where the aggregate rating exceeds 75 MVA through a common point of interconnection to a system Element at a voltage o 100 kV or above.
No
EEI suggests the following change to E1: Any radial system which is described as connected from a single Transmission source [Delete "originating with an automatic interruption device"] and:
See comments to Question 13.
See comments to Question 13.
Comments: EEI appreciates the efforts of the SDT and offers these comments to help guide its efforts. EEI believes that the statutory framework of the Federal Power Act and Section 215 specifically must govern the definition of BES. While FERC has declined to further define the term “Bulk-Power System” (“BPS”) and suggested in Order No. 743 that the BPS “reaches farther than those facilities that are included” in the BES, it is clear that the BES cannot extend further than the BPS, and therefore the statutory definition of BPS must be the guide for the SDT’s efforts, particularly with regard to the treatment of local distribution facilities. The BPS definition in Section 215 includes: (1) facilities and control systems necessary for operating an interconnected electric energy transmission network; and (2) electric energy from generation facilities needed to maintain transmission system reliability. But the term BPS does not include facilities used in the local distribution of electric energy. The definition of BES must comply with the statutory definition. EEI points to several issues to which it believes the SDT should pay particular attention. First, the facilities and control systems to be included within the BPS/BES must be necessary for operating an interconnected electric transmission network. Therefore, each of the proposed inclusions and exclusions must be measured against this requirement – are they necessary? It is insufficient to include a particular facility or element within the BES definition merely because it would be desirable to have such a facility covered under the BES or a particular standard. In addition, EEI believes that imposing a requirement that all contiguous elements be included is too broad and may sweep in facilities to the BES definition that are statutorily excluded because they are not necessary. For example, while blackstart resources may be “necessary,” including all facilities that are contiguous

between a particular blackstart resource and the transmission system is likely to include elements that are not “necessary” to the operation of the interstate transmission network and therefore not within the statutory definition. As a general rule, EEI believes it is appropriate to include contiguous elements or facilities above 100kV necessary for operating the interconnected transmission network, but not any below 100 kV unless the element is necessary to operate the interconnected transmission network. There is no reason to require a “contiguous” BES down to the local distribution facility level. Section 215 gives NERC and FERC jurisdiction over “users, owners and operators” of the BPS. Therefore, FERC has authority to require an entity that is not a BES facility to comply with applicable NERC requirements where necessary for BPS reliability. This approach would achieve the goals of BPS reliability without extending the full reach of BES applicability to facilities that may be local distribution facilities that are excluded from Section 215. Second, both the transmission and the generation facilities included within the BPS/BES must be tied to maintaining the reliable operation of the BPS. Section 215 defines the term “reliable operation” as “operating the elements of the bulk-power system within equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of such system will not occur as a result of a sudden disturbance, including a cybersecurity incident, or unanticipated failure. The statute does not require that there be no loss of load. The statute is aimed at avoiding uncontrolled separation or cascading failures. Therefore, consistent with the statute, the definition of BES should only include elements that are necessary to prevent these occurrences. Third, the statute contains a specific exclusion for facilities used in the local distribution of electric energy (“local distribution facilities”). FERC has agreed in Orders No. 743 and 743-A that local distribution facilities are not subject to Section 215. FERC, as the agency implementing Section 215, has the authority to interpret what that means. In Order 743-A, FERC left it to NERC, and therefore to the SDT, to determine in the first instance which facilities are local distribution and therefore excluded and whether or not to use tests such as the Seven Factor Test from Order No. 888. Order No. 888 set out seven indicators, a combination of functional and technical tests, to assist companies and state commissions with separating local distribution facilities from FERC jurisdictional transmission facilities on a case by case basis. The seven factors are: (1) Local distribution facilities are normally in close proximity to retail customers; (2) Local distribution facilities are primarily radial in character; (3) Power flows into local distribution systems; it rarely, if ever, flows out; (4) When power enters into a local distribution system, it is not reconsigned or transported on to some other market; (5) Power entering a local distribution system is consumer in a comparatively restricted geographical area; (6) Meters are based at the transmission/local distribution interface to measure flows into the local distribution facilities; and (7) Local distribution systems will be of reduced voltage. EEI acknowledges that the Seven Factor test does not draw a bright line between facilities used in local distribution and transmission facilities and may not be a perfect fit for applying to specific pieces of equipment as the SDT has tried to do. However, many state commissions have made determination of what are local distribution facilities and FERC has concurred with these determinations. Therefore, EEI proposes that if NERC or FERC seek to include facilities (or class of facilities) in the BES that have been previously determined by a state commission to be local distribution through application of the Seven Factor Test, that there is a rebuttable presumption that these are facilities used in local distribution for purposes of the BES definition. In order to overcome this presumption, NERC/FERC must make a showing demonstrating that these facilities “necessary” for the reliable operation of the BPS. EEI will address this and a procedure for seeking exclusion of facilities that previously have been determined to be local distribution in its comments to be submitted on the exceptions process. In applying the statutory exclusion for local distribution facilities, the SDT should ensure that the inclusions do not include local distribution facilities and that the exclusions are sufficient to exclude local distribution facilities. Similarly, it is not sufficient to include an element that would otherwise be a local distribution facility merely to support a facility clearly within the BES. For example, the SDT should consider the how the proposed criteria would classify types of equipment such as distribution voltage equipment – some, such as cap banks in a generation switchyard do support the transmission system versus a regulator on a distribution feeder – the former may be part of the BES and the latter unlikely or not at all.
Individual
Bud Tracy
Blachly Lane Electric Cooperative
No
First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of

the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: "once a facility is classified as local distribution, the facility will be excluded from the [BES] unless changes to the system warrant a review of the determination." Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local

distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Further, we support the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as "Generation" that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as "Facility" that include "Bulk Electric System" as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase "Bulk Electric System" as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT's use of defined terms such as "Element," "Real Power," and "Reactive Power."

Yes
We support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. We note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC's BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.
No
The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because "there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria." Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are "needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the

Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a "contiguous" BES. On the contrary, because Section 215 allows reliability standards to be applied to "users" of the bulk system as well as "owners" and "operators," local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application fo particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a "contiguous" or "non-contiguous" BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.

Yes

FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.

As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.

Yes

We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT's wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

Yes

We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.

As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.

Individual

Paul Titus

Northern Wasco County PUD

No

As a general matter, Northern Wasco County PUD supports the approach the Standards Development Team ("SDT") has taken to defining the Bulk Electric System ("BES"). The changes made in the revised core definition are helpful and represent significant progress toward an acceptable definition. With an effective and efficient exclusion process, the draft will better define the BES as a whole. We urge the SDT to bear in mind the restrictions contained in Section 215 of the Federal Power Act ("FPA") The "bulk-power system" (As per FERC, we treat the statutory term "bulk-power system" as equivalent to the term ordinarily used in the industry, "Bulk Electric System") definition imposes a clear limit on the reach of the mandatory reliability regime. The BES is made up of only those "facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)" and "electric energy from generation facilities needed to maintain

transmission system reliability." Congress reinforced that limit in Section 215(i), where it emphasized that the FPA authorizes the imposition of reliability standards "for only the bulk-power system." Northern Wasco County PUD is concerned that the SDT's proposed definition is overly-broad, and that it will sweep in many Elements that have little or no material impact on the reliable operation of the interconnected bulk transmission grid. For example, the definition uses the arbitrary 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators. Accordingly, for the BES definition to conform to the requirements of the statute, the SDT must adopt an effective mechanism to exempt facilities like these that are improperly swept in by the SDT's brightline approach to inclusions and exclusions. For this reason, the Exception process to accompany the SDT's definition is of critical concern. If the SDT incorporates this statutory language as its core definition, it will have addressed FERC's primary concern with a minimum of disruption to the current NERC system of definitions. The definition could then be further elaborated to show specific points of demarcation for each inclusion and exclusion similar to that Proposal 6 from the WECC Bulk Electric System Definition Task Force ("BESDTF") team to further delineate BES and non-BES facilities.

No

In concept, we support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. In this regard, we note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams noting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort. Also, the reference to "two windings of 100 kV or higher" may create some confusion because many three-phase transformer banks have 6 or 9 windings, depending on whether the transformer has a tertiary. We suggest clarifying this provision by changing the clause reference two windings to read: "the two highest voltage transformer windings of 100 kV per phase that are connected to the Bulk Electric System." We again urge the SDT to consider further delineation of points of demarcation similar to WECC BESDTF Proposal 6.

No

Northern Wasco County PUD is concerned that I2 inclusion criteria that includes the arbitrary 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted improperly expands the BES definition to include generators that the statute requires to be excluded. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Unfortunately, the SDT appears to have concluded that any interconnection facility operating above 100-kV should be classified as BES. The result will be to require Generation Owners to register as Transmission Owners/Operators, as well, producing substantial additional compliance costs for those Generation Owners but resulting in little or no improvement in the reliability of the BES. We recommend that the SDT, like the Project 2010-07 SDT (commonly referred to as the GO/TO Team), give careful consideration to the practical results of its recommendations rather than relying on abstract conclusions about whether a "contiguous" or "non-contiguous" BES is more desirable. We are concerned that the SDT's pursuit of a "contiguous" BES will result in a substantially over-inclusive BES definition. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. NERC's Standards Drafting Team for Project 2010-07, has already considered this question and, based on an in-depth review of potentially applicable reliability standards, has concluded that generation interconnection facilities, even if operated above 100-kV, need to comply only with a limited set of reliability standards in order to achieve the reliability goals. Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission

Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability.
No
Northern Wasco County PUD is concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition.
Yes
Including "all" blackstart and blackstart cranking paths in the BES may ultimately provide an incentive to the electric industry to reduce the number of resources with blackstart capability. We therefore suggest that essential blackstart resources identified by the Regional Entity should be included in the Bulk Electric System, but non-essential blackstart resources need not be.
No
Northern Wasco County PUD agrees that it is important to address wind generation facilities and similar generation facilities in which a large number of generating units, each with a relatively small capacity, are clustered and fed into the grid at a single interconnection point. That being said, Northern Wasco County PUD is concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained. We believe the exclusion as drafted adequately defines radials.
No
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold (through reference to Inclusion I2) lacks an adequate technical justification in this context. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit ("standby, back-up, and maintenance power…") should be eliminated.
Yes
Northern Wasco County PUD strongly supports the categorical exclusion of Local Distribution Networks from the BES. In fact, for reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are, of course, probably the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. Northern Wasco County PUD supports the LDN exclusion, but we believe the exclusion should be refined in the following respects: • The SDT's draft states that: "LDN's are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load." (emphasis added) We recommend that the SDT revise the sentence quoted above as follows: "LDN's are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load and not to accommodate bulk transfers of power across the interconnected bulk system." By instituting this suggestion, the SDT would emphasize the key difference between an LDN, which is designed to reliably serve local, end-use retail customers, and the BES, which is designed to accommodate bulk transfer of power at wholesale over long distances.
Yes

Northern Wasco County PUD supports the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that can ill afford the substantial costs that accompany imposition of mandatory compliance with reliability standards. Further, we agree that the small utilities covered by the exemption will have no measurable impact on the operation of the interconnected BES. In the Pacific Northwest, many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

While Northern Wasco County PUD agrees that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing most local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed at greater length in our answer to Question 1, Northern Wasco County PUD believes that the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES. As discussed in our answer to Question 3, Northern Wasco County PUD notes that exclusion of facilities from the BES does not mean that owners of those facilities are entirely exempt from reliability standards. On the contrary, the statute provides that "users" of the BES can be subject to reliability regulation. Hence, even where an entity does not own BES assets, it could be required to, for example, provide necessary information to the applicable Reliability Coordinator and to participate in the regional Under-Frequency Load Shedding program by setting the UFLS relays in its Local Distribution Network at the appropriate settings. We note that participants in the WECC BESDTF Task Force generally agreed that appropriate information should be provided by non-BES entities, although there was considerable concern related to ensuring that the provision of information was not unduly burdensome.

Yes

The Exceptions process is a necessary part of making this proposal complaint with the Federal Power Act. As noted in our responses to Question 1 and Question 11, we believe the basic SDT proposal is potentially in conflict with the limitations of the Federal Power Act, and in particular the statutory exclusion for facilities used in the local distribution of electric energy. The SDT's approach can meet the statutory requirements only if the Exception process currently under development results in facilities that are not properly classified as BES being exempted from regulation as BES facilities.

Northern Wasco County PUD has these additional concerns: • The current definition provides that "Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process." Northern Wasco County PUD is concerned that the SDT carefully delineate which entity has the burden of proof in the exclusion process. The WECC BESDTF approach, which we commend to the SDT, laid out these burdens in some detail. Under that approach, essentially, if a facility is excluded from the BES by virtue of the specific exclusions listed in the definition, the Regional Entity bears the burden of proving that the facility nonetheless has a material impact on the interconnected bulk transmission system and therefore should be included in the BES. On the other hand, if a facility is classified as BES by virtue of the list of inclusions set forth in the BES definition, it can still escape classification as BES, but bears the burden of demonstrating that its facility has no material impact on the interconnected transmission system. We urge the SDT to give careful consideration to these burden-of-proof questions and to follow the lead of the WECC BES Task Force. • For the reasons we have explained in our answer to Question 11, we believe the Exception process is critical both to ensure that the BES definition is effective in producing measurable gains to bulk system reliability and to ensuring that the definition will comply with the limitations Congress placed in Section 215. Hence, we believe the entire BES definition, including the Exception process and related procedures, should be vetted through the NERC Standards Development Process, including the full comment periods and a ballot approvals provided for in that process. We are concerned that important elements of the BES definition have been assigned to the Rules of Procedure Team, and that changes in the Rules of Procedure are subject to approval in a process that provides considerably less due process and industry input than the Standards Development Process. Accordingly, we urge that all elements of the BES definition, including those elements that have been assigned to the Rules of Procedure Team, be vetted through the Standards Development Process.

Individual

Bill Dearing

PUD No. 2 of Grant County, Washington
Yes
Grant supports the approach the Standards Development Team (“SDT”) has taken to defining the Bulk Electric System (“BES”). The changes made in the revised core definition are helpful and represent significant progress toward an acceptable definition. With an effective and efficient exclusion process, the draft will better define the BES as a whole. The definition could then be further elaborated to show specific points of demarcation for each inclusion and exclusion similar to that Proposal 6 from the WECC Bulk Electric System Definition Task Force (“BESDTF”) team to further delineate BES and non-BES facilities.
Yes
Grant supports the SDT’s attempt to provide a clear demarcation between the BES and non-BES elements. In I1 the transformer inclusion specifies “two windings greater than 100 kV or”. This appears to leave auto transformers out of the definition entirely. If the intent is to include these transformers, then more clarity might be available if it was revised to “at least two sets of bushings rated higher than 100 kV unless…” Inclusion I-1 is helpful because it implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. In this regard, we note again that the WECC BESDTF has devoted considerable effort to this question and has developed one-line diagrams noting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.
No
In the same comments, the SDT also states that it has considered “the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable.” Unfortunately, the SDT appears to have concluded that any interconnection facility operating above 100-kV should be classified as BES. The result will be to require Generation Owners to register as Transmission Owners/Operators, as well, producing substantial additional compliance costs for those Generation Owners but resulting in little or no improvement in the reliability of the BES. We recommend that the SDT, like the Project 2010-07 SDT (commonly referred to as the GO/TO Team), give careful consideration to the practical results of its recommendations rather than relying on abstract conclusions about whether a “contiguous” or “non-contiguous” BES is more desirable. We are concerned that the SDT’s pursuit of a “contiguous” BES will result in a substantially over-inclusive BES definition. The “contiguous” BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. A “contiguous” BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES “contiguous.” The improper classification of local distribution lines as BES “Transmission” facilities results in huge regulatory compliance burdens with little or no improvement in bulk system reliability.
Yes
Grant supports this proposed inclusion.
Yes
Grant supports this proposed inclusion with the caveat that the BES should be allowed to be non-contiguous, especially in this case, if the unit is low voltage.
Yes
Grant agrees that it is important to address wind generation facilities and similar generation facilities in which a large number of generating units, each with a relatively small capacity, are clustered and fed into the grid at a single interconnection point.
Yes
E1 specifically states “Any radial system which is described as connected from a single transmission source originating with an automatic disconnection device and…”. The example of concern is a radial tap to a single distribution power transformer that is connected to a ring bus or breaker and a half bus. In this case the transformer would have 2 automatic disconnection devices from what is

essentially a single source. Typically ring bus and breaker and a half bus are used to improve reliability, limiting the exclusion to a single disconnecting device appears to bring a hypothetical radial tap fed from a ring bus or breaker and a half bus into the BES definition. Although the LDN exclusion might apply there is the potential for many situations where it might not. A possible remedy is to revise the exclusion as follows: “Any radial system which is described as connected from a single transmission source that originates with automatic disconnection device(s) and…” In addition, a definition for “a single transmission source” should be provided to clarify the intent. Suggestion: “A single transmission source would be any transmission source located within a single facility, yard or fenced area and electrically continuous at a single voltage level”.
Yes
Unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit (“standby, back-up, and maintenance power…”) should be eliminated.
Yes
Grant supports the categorical exclusion of Local Distribution Networks from the BES. We believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are, of course, probably the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. Grant supports the LDN exclusion, but we believe the exclusion should be refined in the following respects: • The SDT’s draft states that: “LDN’s are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load.” (emphasis added) We recommend that the SDT revise the sentence quoted above as follows: “LDN’s are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load and not to accommodate bulk transfers of power across the interconnected bulk system.” By instituting this suggestion, the SDT would emphasize the key difference between an LDN, which is designed to reliably serve local, end-use retail customers, and the BES, which is designed to accommodate bulk transfer of power at wholesale over long distances. Two more suggestions: Bullet d, starts with “bulk power” and ends with generic “energy” transferred through and out of the LDN. This is inconsistent and will likely lead to confusion. In addition, “paper only” contract path transfers that result in no physical flow across the LDN should be specifically excluded.
Grant supports the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that can ill afford the substantial costs that accompany imposition of mandatory compliance with reliability standards. Further, we agree that the small utilities covered by the exemption will have no measurable impact on the operation of the interconnected BES. In the Pacific Northwest, many small entities were required to register by virtue of owning a very small portion of the region’s 115-kV transmission. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.
Yes
Grant supports the concepts as presented in the draft. Exclusion of facilities from the BES does not mean that owners of those facilities are entirely exempt from reliability standards. The statutes provide that “users” of the BES can be subject to reliability regulation. Hence, even where an entity does not own BES assets, it could be required to, for example, provide necessary information to the applicable Reliability Coordinator and to participate in the regional Under-Frequency Load Shedding program by setting the UFLS relays in its Local Distribution Network at the appropriate settings. We note that participants in the WECC BESDTF Task Force generally agreed that appropriate information should be provided by non-BES entities, although there was considerable concern related to ensuring that the provision of information was not unduly burdensome.
Yes
The Exceptions process is a necessary part of making this proposal complaint with the Federal Power Act. The SDT’s approach can meet the statutory requirements only if the Exception process currently under development results in facilities that are not properly classified as BES being exempted from

regulation as BES facilities.
Grant has these additional concerns: • We are concerned that the proposed 24-month delay in the effective date of the new definition will delay the potentially beneficial effects of the SDT's efforts, especially for utilities that have been inappropriately required to meet BES reliability standards, which is a common situation in WECC. We therefore urge the new BES definition become effective immediately upon approval by FERC or other applicable regulatory agencies. Entities that have been improperly required to meet standards can then immediately redirect resources to where they are truly needed. For entities that have not previously been registered for BES-related functions but that would be required to register under the new definition, we agree that 24 months is an appropriate transition period to allow the newly-registered entity to attain compliance with newly-applicable reliability standards, many of which require new training for employees, new maintenance procedures, and complex new operational protocols. However, the transition period for newly-registered entities should be structured in a way that does not prevent entities seeking deregistration from benefitting from the new definition at the earliest possible date. • The current definition provides that "Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process." Grant is concerned that the SDT carefully delineate which entity has the burden of proof in the exclusion process. The WECC BESDTF approach, which we commend to the SDT, laid out these burdens in some detail. Under that approach, essentially, if a facility is excluded from the BES by virtue of the specific exclusions listed in the definition, the Regional Entity bears the burden of proving that the facility nonetheless has a material impact on the interconnected bulk transmission system and therefore should be included in the BES. On the other hand, if a facility is classified as BES by virtue of the list of inclusions set forth in the BES definition, it can still escape classification as BES, but bears the burden of demonstrating that its facility has no material impact on the interconnected transmission system. We urge the SDT to give careful consideration to these burden-of-proof questions and to follow the lead of the WECC BES Task Force.
Group
Small Entity Working Group (SEWG)
Scott Berry
Yes
The Small Entity Working Group (SEWG) appreciates the opportunity to comment on the draft BES definition. The group generally supports the direction taken by the SDT, with some minor changes. The BES definition should refer to "non-generator Reactive Power resources," to clarify that although all generators provide some reactive power, the generators that do not meet the criteria of I2 through I5 are not included in the BES. The BES definition should include a reference to the existence of the exception process.
No comment.
Yes
Yes, with a minor clarification. Individual generating units greater than 20 MVA (gross nameplate rating) including the generator terminals through the GSU which has a high side connection voltage of 100 kV or above. This should help state that only generators that are both over 20 MVA and connected through a GSU with a high side voltage of at least 100kV are included in the BES.
No comment.
No
The SEWG proposes a minor change to Inclusion I4. The SEWG recommends that the SDT exclude Blackstart Units under 20MW and Blackstart Units that are connected via their GSU to Non-BES Facilities (under 100kV). We believe this would be a minimal impact on the existing Restoration Plans while increasing the reliability and viability of these Restoration Plans since the industry would be forced to use only BES facilities as defined by NERC BES definition. In addition, a clarification is needed under the first bullet under I4 in the posted word comment form for this BES draft (posted in the first column under Implementation Plan for Definition). It should be changed to read "Blackstart units that have been included in the Transmission Operator's restoration plan and their respective cranking paths..." We do not believe it was the intent of the SDT to include all blackstart units in the BES definition regardless if they are not part of a Transmission Operator's restoration plan.
No Comment
Yes

Yes, with some minor changes. Delete the words “described as” in the sentence: Any radial system which is described as connected from a single Transmission source originating with an automatic interruption device and. How the radial system is actually connected is important not the description. The SEWG believes that “a single Transmission source” should be defined in such a way to ensure all the various bus configurations are captured. The SEWG recommends modifying the language in E1 to allow for the use of a “switching device” rather than an “automatic reclosing device” for two specifics situations as follows: 1) When a radial transmission line is feed from a ring bus, but only serve load and/or non-registered generation: 2) When a radial transmission line is feed from a breaker and half bus and it only serves load and/or non-registered generation. In both cases, faults on the radial transmission line will not interrupt network transmission flows and therefore has minimal impact on the BES. For direct connection of radial transmission lines to a networked transmission line, the SEWG agrees that an automatic interrupting device is required to protect the BES.
No Comments
Yes
Yes, with some clarifying edits. The first sentence of Exclusion 3 should be revised for accuracy as follows: “”Local Distribution Networks (LDN): Groups of Elements operated above 100 kV that are primarily intended to distribute power to Load rather than to transfer bulk power across the Interconnected System.” The second sentence should be revised for clarity as follows: “LDN’s are connected to the Bulk Electric System (BES) from more than one Transmission source solely to improve the level of service to retail customer Load.” Exclusion E3 a) should be revised as we note in our comments in Question#7 to allow for the use of switching devices in specific situations
Yes
Yes, with some clarifying edits. The final sentence should be revised as follows: “For purposes of this exclusion, a ‘small utility’ is an entity that performs a distribution provider or load serving entity function but is not required to register as a Distribution Provider or Load Serving Entity by the ERO.”
No comments
No comments
No comments
Group
Idaho Falls Power
Richard Malloy
No
We believe that inclusions or exclusions tied to brightline registration criteria (such as the 20MVA single generation source or 75 MVA facility) does not fulfill the effort the NERC BES definition project was tasked to undertake. The current draft's language will draw in many small municipal and other like entities with small generation assets, which have no material impact upon the BES. Further, should these generation assets not be excluded, this draft implies that all assets downstream to the point of interconnection are BES as well regardless of point of connection. We believe it was the original intent of this definition project to remove such immaterial assets and the undue burden placed upon such entities and subsequently their rate payers, who have no impact to the BES.
Yes
It seems reasonable to conclude that such transformers would belong in a classification that comprises the BES.
No
We feel the bright line criteria 20 MVA for generation is equally as arbitrary as the 100KV threshold for transmission, which was the impetus for the NERC BES definition effort. There should be more defining criteria to establish what generation resources should be included in the BES. Possible criteria to consider would be generation serving load other than local load connected to an LDN or generation that is dispatchable. Surely, just as not all 100 kV is is material to the BES, niether is all 20MVA or greater generation. If this draft's language is allowed to stand at the brightline of 20MVA, without additional defining criteria, will have the likely result of an inordinate number of entities having to resolve the issue of material impact through the Rules of Procedure exemption process. We urge NERC to take this opportunity now to more clearly define material generation assets beyond a simple brightline criteria. In addition to our concern of this draft following bright line registry criteria for

generation assets, it is our concern that there is no distinction made as to where the generation is connected. Our belief is that generation on an LDN wherein the net flow of power is into the LDN should be exempt as the liklihood of that generation being material to the larger BES is exceedingly small.
No
Again, following our statement in question 3, we feel an arbitrary brightline threshold requires additional defining criteria for inclusion. Adopting the registry's brightline criteria is to us skirting the purpose of the BES definition effort, and lends no more clarity to what is in fact the BES.
Yes
It is reasonable to conclude that Blackstart generation resources are material to the BES.
No
This inclusion seems redundant to the registry criteria for GO/GOP of a facility generation of 75MVA or greater. We do not see how this definition adds or removes any assets already defined by the registry criteria.
No
This exclusion speaks to radial systems with generation resouces not identified in I2, I3, I4, or, I5, thus seemingly only to apply to generation resouces smaller than 20MVA. We wonder why this exclusion then exists as these resources are already excluded by not being large enough to fall under the registry criteria, and thus need not comply with the reliability standards.
No
We do not agree with E2(i). If the generation assets listed in the inclusions of I2 and I3 are not permitted to be excluded in E2, then what is the point of E2? The generation assets would already be in or out based upon the registry's MVA nameplate capacity. We would support E2 if provision (i) were struck. If generation assets are behind the meter on a local distribution network (fitting the criteria E3 for exemption) then too the generation should be exempted regardless of MVA rating. Moreover, we do not agree that there is a brightline MVA threshold of materiality to the BES. We would hope that the drafting team could demonstrate how the 20MVA brightline is a valid threshold for generation while the 100kV for transmission is not. We are concerned that relatively small generation on a local distribution network wherein generation is always serving local retail load behind the meter will be labelled a BES asset. As such, then is the LDN to the point of interconnection a BES asset as well, and therefore subject to the suite of TO/TOP standards? We feel such an outcome is unreasonable. It seems to us, as is stated under section 215 of the FPA, that the term BES "does not include facilities used in the local distribution of electric energy." To a logical conclusion, the generation attached to local distribution was considered and is intended to be one of the "facilities" and should therefore be exempted form inclusion in the BES. However, should the drafting team deem that all generation above 20MVA are a BES assets, we would hope that the exclusion for Local Distribution Networks could still stand and that the generation on the LDN would be divorced and defined separately. Our opinion is the BES is not one large contiguous system, but is rather comprised of assets across the region, which due to their size or location are vital to a sound BES but are not necessarily connected to each other. This principle would allow the generation to be regulated yet remove the burden of transmission standards from small entities.
No
We support this exclusion, however generation assets on a Local Distribution Network should be excluded regardless of MVA rating if all other defining critera in E3 are met. Additionally, it is unclear as written whether a single generation asset greater than 20MVA would be excluded as E3(b) states 75 MVA, but is inconsist with E2(i). Some clarification of intent is needed to resolve the ambiguities between these two exclusions.
No
Just as 100kv is an arbitrary number, so is 20MVA. We appreciate the NERC efforts made to define transmission material to the BES, and likewise feel the same efforts should be applied to small generation resources. There exists a large number of utilities with small generation serving local load on an LDN that will be possibly drawn into TO/TOP standard's compliance by the language in this draft. We hope the drafting team will define BES generation beyond a brightline criteria, as 20MVA lends no more clarity as to what is a BES asset than does 100kV. We believe it should be demonstrated as to why 20MVA is deemed a generation threshold of materiality to the BES. The

opportunity now exists to address thresholds, not just the 100kV.

No

In the exclusions, we feel there has not been given enough clarification of generation assets on a LDN, specifically, is a single generation resource >20MVA but <75 MVA excluded? This does not seem clear because of the seeming inconsistencies of E2(i) and E3(b). Further, we believe generation on an LDN serving local load wherein the net flow is into the LDN should be excluded.

Yes

It is unclear how the reliability standards will be applied to registered entities should some assets be deemed not to be a part of the BES. As an example; will a an LSE with >25MW of load connected at 161kv be responsible for relay maintenance under PRC-005-1 if the 161 kv is exempted as a local distribution network? Clarification of this issue may be beyond the scope of the BES definition effort, however guidance in this area should accompany this effort.

Individual

Dave Markham

Central Electric Cooperative

No

First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities

and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: "once a facility is classified as local distribution, the facility will be excluded from the [BES] unless changes to the system warrant a review of the determination." Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is

nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase “unless such designation is modified by the list shown below” does not modify “all Transmission Elements operated at 100 kV or higher” because of its placement at the end of the independent clause “Reactive Power resources connected at 100 kV or higher.” Further, we support the use of the phrase “Transmission Elements” as the starting point for the base definition because both “Transmission” and “Elements” are already defined in the NERC Glossary of Terms Used, and the use of the term “Transmission” makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as “Generation” that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as “Facility” that include “Bulk Electric System” as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase “Bulk Electric System” as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT’s use of defined terms such as “Element,” “Real Power,” and “Reactive Power.”

Yes

We support the SDT’s attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. We note that the WECC Bulk Electric System Definition Task Force (“BESDTF”) has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC’s BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.

No

The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the “bulk-power system” unless they produce “electric energy” that is “needed to maintain transmission system reliability.” 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is “needed to maintain transmission system reliability.” Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because “there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria.” Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are “needed to maintain transmission system reliability,” the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance

Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a "contiguous" BES. On the contrary, because Section 215 allows reliability standards to be applied to "users" of the bulk system as well as "owners" and "operators," local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application fo particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is

considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a “contiguous” or “non-contiguous” BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy “needed to maintain transmission system reliability” and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.

Yes

FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.

As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.

Yes

We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT’s wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

Yes

We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region’s 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that

should not be classified as BES.

As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.

Individual

Dave Hagen

Clearwater Power Company

No

First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: "once a facility is classified as local distribution, the facility will be excluded from the [BES] unless changes to the system warrant a review of the determination." Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue

here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Further, we support the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude

facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as “Generation” that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as “Facility” that include “Bulk Electric System” as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase “Bulk Electric System” as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT’s use of defined terms such as “Element,” “Real Power,” and “Reactive Power.”

Yes

We support the SDT’s attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. We note that the WECC Bulk Electric System Definition Task Force (“BESDTF”) has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC’s BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.

No

The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the “bulk-power system” unless they produce “electric energy” that is “needed to maintain transmission system reliability.” 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is “needed to maintain transmission system reliability.” Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because “there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria.” Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are “needed to maintain transmission system reliability,” the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered “the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable.” Id. The SDT’s reasons for reaching this conclusion are not well-explained, but apparently the concern is that a “non-contiguous” BES could create “reliability gaps.” This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a “contiguous” BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC’s

Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a "contiguous" BES. On the contrary, because Section 215 allows reliability standards to be applied to "users" of the bulk system as well as "owners" and "operators," local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application fo particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a "contiguous" or "non-contiguous" BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition. The 100 MVA threshold

seems more in alignment with technical standards such as Power System Stabilizer requirements.
No
We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.
Yes
We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT's wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.
Yes
We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.
No
We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.
As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.
Individual
Roman Gillen
Consumers Power Inc.
No
First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of

the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: "once a facility is classified as local distribution, the facility will be excluded from the [BES] unless changes to the system warrant a review of the determination." Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local

distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Further, we support the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as "Generation" that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as "Facility" that include "Bulk Electric System" as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase "Bulk Electric System" as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT's use of defined terms such as "Element," "Real Power," and "Reactive Power."

Yes
We support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. We note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC's BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.
No
The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because "there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria." Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are "needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the

Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a "contiguous" BES. On the contrary, because Section 215 allows reliability standards to be applied to "users" of the bulk system as well as "owners" and "operators," local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application fo particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a "contiguous" or "non-contiguous" BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.

Yes

FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.

As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.

Yes

We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT's wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

Yes

We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.

As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.

Individual

Roger Meader

Coos-Curry Electric Cooperative

No

First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from

generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: "once a facility is classified as local distribution, the facility will be excluded from the [BES] unless changes to the system warrant a review of the determination." Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric

energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Further, we support the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as "Generation" that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as "Facility" that include "Bulk Electric System" as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase "Bulk Electric System" as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT's use of defined terms such as "Element," "Real Power," and "Reactive Power."

Yes

We support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. We note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at:

http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC's BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.

No

Specific language change: Change 20 MVA to 100 MVA The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because "there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria." Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are "needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment

that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a "contiguous" BES. On the contrary, because Section 215 allows reliability standards to be applied to "users" of the bulk system as well as "owners" and "operators," local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application for particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a "contiguous" or "non-contiguous" BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.
No
Specific language change: Change 75 MVA to 100 MVA We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.
No
We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.
Yes
We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to

ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT's wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

Yes

We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.

As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.

Individual

Dave Sabala

Douglas Electric Cooperative

No

First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization

(ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. 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We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities

would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Further, we support the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as "Generation" that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as "Facility" that include "Bulk Electric System" as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase "Bulk Electric System" as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT's use of defined terms such as "Element," "Real Power," and "Reactive Power."

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No

Specific language change: Change 20 MVA to 100 MVA The inclusion of individual generation units

with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because "there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria." Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are "needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk

system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a “contiguous” BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as “BES” facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a “contiguous” BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES “contiguous.” Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES “Transmission” facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a “contiguous” BES. On the contrary, because Section 215 allows reliability standards to be applied to “users” of the bulk system as well as “owners” and “operators,” local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application for particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a “contiguous” or “non-contiguous” BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy “needed to maintain transmission system reliability” and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.

Yes

FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.

As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.

Yes

We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system.

However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT's wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

Yes

We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.

As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.

Individual

Bryan Case

Fall River Electric Cooperative

No

First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the

definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: "once a facility is classified as local distribution, the facility will be excluded from the [BES] unless changes to the system warrant a review of the determination." Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion

for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Further, we support the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as "Generation" that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as "Facility" that include "Bulk Electric System" as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase "Bulk Electric System" as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT's use of defined terms such as "Element," "Real Power," and "Reactive Power."

Yes

We support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. We note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC's BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.

No

Specific language change: Change 20 MVA to 100 MVA The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact,

material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because "there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria." Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are "needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only

plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a "contiguous" BES. On the contrary, because Section 215 allows reliability standards to be applied to "users" of the bulk system as well as "owners" and "operators," local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application for particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a "contiguous" or "non-contiguous" BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.
No
We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.
No
We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.
Yes
We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT's wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.
Yes
We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the

proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.

As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.

Individual

Rick Crinklaw

Lane Electric Cooperative

No

First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution

that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: "once a facility is classified as local distribution, the facility will be excluded from the [BES] unless changes to the system warrant a review of the determination." Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that

would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Further, we support the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as "Generation" that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as "Facility" that include "Bulk Electric System" as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase "Bulk Electric System" as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT's use of defined terms such as "Element," "Real Power," and "Reactive Power."

Yes

We support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. We note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC's BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.

No

Specific language change: Change 20 MVA to 100 MVA The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because "there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria." Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are

"needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a "contiguous" BES. On the contrary, because Section 215 allows reliability standards to be applied to "users" of the bulk system as well as "owners" and "operators," local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and

practical results of how its definition will affect the application for particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a “contiguous” or “non-contiguous” BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy “needed to maintain transmission system reliability” and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.

Yes

FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.

As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.

Yes

We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT’s wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

Yes

We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region’s 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions

and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.

As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.

Individual

Ray Ellis

Lincoln Electric Cooperative

No

First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: "once a facility is classified as local distribution, the facility will be excluded from the [BES] unless changes to the system warrant a review of the determination." Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as

local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." 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defined in the NERC Glossary of Terms Used, and the use of the term “Transmission” makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as “Generation” that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as “Facility” that include “Bulk Electric System” as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase “Bulk Electric System” as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT’s use of defined terms such as “Element,” “Real Power,” and “Reactive Power.”
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We support the SDT’s attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. We note that the WECC Bulk Electric System Definition Task Force (“BESDTF”) has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC’s BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.
No
Specific language change: Change 20 MVA to 100 MVA The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the “bulk-power system” unless they produce “electric energy” that is “needed to maintain transmission system reliability.” 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is “needed to maintain transmission system reliability.” Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because “there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria.” Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are “needed to maintain transmission system reliability,” the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered “the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable.” Id. The SDT’s reasons for reaching this conclusion are not well-explained, but apparently the concern is that a “non-contiguous” BES could create “reliability gaps.” This conclusion cannot be

supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a "contiguous" BES. On the contrary, because Section 215 allows reliability standards to be applied to "users" of the bulk system as well as "owners" and "operators," local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application for particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a "contiguous" or "non-contiguous" BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn

from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy “needed to maintain transmission system reliability” and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.
No
We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.
Yes
We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT’s wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.
Yes
We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region’s 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.
No
We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.
As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.
Individual
Richard Reynolds

Lost River Electric Cooperative
No
First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: "once a facility is classified as local distribution, the facility will be excluded from the [BES] unless changes to the system warrant a review of the determination." Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or

developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Further, we support the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as "Generation" that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as "Facility" that include "Bulk Electric System" as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase

"Bulk Electric System" as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT's use of defined terms such as "Element," "Real Power," and "Reactive Power."

Yes

We support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. We note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC's BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.

No

Specific language change: Change 20 MVA to 100 MVA The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because "there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria." Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are "needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily

related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a "contiguous" BES. On the contrary, because Section 215 allows reliability standards to be applied to "users" of the bulk system as well as "owners" and "operators," local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application for particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a "contiguous" or "non-contiguous" BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.

No

Specific language change: Change 75 MVA to 100 MVA We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our

comments on Question 4.

Yes

FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.

As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.

Yes

We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT's wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

Yes

We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.

As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.

Individual

Annie Terracciano

Northern Lights Inc.

No

First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to

question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: “Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]” Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) “shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System.” Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term “Bulk-Power System” or “BPS” as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy.” Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities’ jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that “Congress has specifically exempted ‘facilities used in the local distribution of electric energy’” from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: “once a facility is classified as local distribution, the facility will be excluded from the [BES] unless changes to the system warrant a review of the determination.” Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, “the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary.” Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent

indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Further, we support the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as "Generation" that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as "Facility" that include "Bulk Electric System" as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase "Bulk Electric System" as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT's use of defined terms such as "Element," "Real Power," and "Reactive Power."

Yes

We support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin.

We note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC's BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.

No

Specific language change: Change 20 MVA to 100 MVA The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because "there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria." Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are "needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for

Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a "contiguous" BES. On the contrary, because Section 215 allows reliability standards to be applied to "users" of the bulk system as well as "owners" and "operators," local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application for particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a "contiguous" or "non-contiguous" BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.

Yes

FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.

As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.

Yes

We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT's wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

Yes

We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.

As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.

Individual

Doug Adams

Okanogan Electric Cooperative

No

First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the

limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). 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We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in

the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Further, we support the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as "Generation" that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as "Facility" that include "Bulk Electric System" as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase "Bulk Electric System" as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT's use of defined terms such as "Element," "Real Power," and "Reactive Power."

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Specific language change: Change 20 MVA to 100 MVA The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the “bulk-power system” unless they produce “electric energy” that is “needed to maintain transmission system reliability.” 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is “needed to maintain transmission system reliability.” Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because “there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria.” Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are “needed to maintain transmission system reliability,” the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered “the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable.” Id. The SDT’s reasons for reaching this conclusion are not well-explained, but apparently the concern is that a “non-contiguous” BES could create “reliability gaps.” This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a “contiguous” BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC’s Standards Drafting Team for Project 2010-07 and its predecessor, the “GO-TO Task Force.” The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as “Transmission” and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities “are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system.” White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators “would do little, if anything, to improve the reliability of the Bulk Electric System,” especially “when compared to the operation of the equipment that actually produces electricity – the generation equipment itself.” Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a “contiguous” BES, the resulting definition will be substantially over-inclusive. The “contiguous” BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the

operation of the BES. The adoption of a “contiguous” BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a “contiguous” BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as “BES” facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a “contiguous” BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES “contiguous.” Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES “Transmission” facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a “contiguous” BES. On the contrary, because Section 215 allows reliability standards to be applied to “users” of the bulk system as well as “owners” and “operators,” local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application for particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a “contiguous” or “non-contiguous” BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy “needed to maintain transmission system reliability” and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.

Yes

FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.

As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.

Yes

We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be

classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT's wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

Yes

We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.

As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.

Individual

Rick Paschall

PNGC Power

No

First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional

Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: "once a facility is classified as local distribution, the facility will be excluded from the [BES] unless changes to the system warrant a review of the determination." Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC,

and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Further, we support the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as "Generation" that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as "Facility" that include "Bulk Electric System" as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase "Bulk Electric System" as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT's use of defined terms such as "Element," "Real Power," and "Reactive Power."

Yes

We support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. We note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC's BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.

No

Specific language change: Change 20 MVA to 100 MVA The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry.

Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because "there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria." Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are "needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." 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The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS

relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES “contiguous.” Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES “Transmission” facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a “contiguous” BES. On the contrary, because Section 215 allows reliability standards to be applied to “users” of the bulk system as well as “owners” and “operators,” local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application for particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a “contiguous” or “non-contiguous” BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.
No
Specific language change: Change 75 MVA to 100 MVA We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy “needed to maintain transmission system reliability” and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.
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We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.
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We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT’s wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.
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We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.

As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.

Individual

Heber Carpenter

Raft River Rural Electric Cooperative

No

First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent

any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: "once a facility is classified as local distribution, the facility will be excluded from the [BES] unless changes to the system warrant a review of the determination." Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the

clause “unless such designation is modified by the list shown below” modifies only the preceding clause (“Reactive Power resources connected at 100 kV or higher”) or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase “unless such designation is modified by the list shown below” does not modify “all Transmission Elements operated at 100 kV or higher” because of its placement at the end of the independent clause “Reactive Power resources connected at 100 kV or higher.” Further, we support the use of the phrase “Transmission Elements” as the starting point for the base definition because both “Transmission” and “Elements” are already defined in the NERC Glossary of Terms Used, and the use of the term “Transmission” makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as “Generation” that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as “Facility” that include “Bulk Electric System” as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase “Bulk Electric System” as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT’s use of defined terms such as “Element,” “Real Power,” and “Reactive Power.”

Yes

We support the SDT’s attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. We note that the WECC Bulk Electric System Definition Task Force (“BESDTF”) has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC’s BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.

No

Specific language change: Change 20 MVA to 100 MVA The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the “bulk-power system” unless they produce “electric energy” that is “needed to maintain transmission system reliability.” 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is “needed to maintain transmission system reliability.” Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because “there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria.” Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this

gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are "needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a "contiguous" BES. On the contrary, because Section 215 allows reliability standards to be applied to "users" of the bulk system as well as "owners" and "operators," local distribution systems operating UFLS relays and other bulk system protection devices could be

required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application for particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a “contiguous” or “non-contiguous” BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.

No

Specific language change: Change 75 MVA to 100 MVA We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy “needed to maintain transmission system reliability” and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.

Yes

FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.

As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.

Yes

We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT’s wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

Yes

We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region’s 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance

therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.

As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.

Individual

Ken Dizes

Salmon River Electric Cooperative

No

First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: "once a facility is classified as local distribution, the facility will be excluded from the [BES]

unless changes to the system warrant a review of the determination." Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation

is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Further, we support the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as "Generation" that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as "Facility" that include "Bulk Electric System" as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase "Bulk Electric System" as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT's use of defined terms such as "Element," "Real Power," and "Reactive Power."

Yes

We support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. We note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC's BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.

No

Specific language change: Change 20 MVA to 100 MVA The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because "there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria." Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are "needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT

also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a "contiguous" BES. On the contrary, because Section 215 allows reliability standards to be applied to "users" of the bulk system as well as "owners" and "operators," local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application for particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a "contiguous" or "non-contiguous" BES is more desirable rather than engaging in a careful analysis of whether the proposed definition

achieves reliability goals in the most efficient manner possible.
No
We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.
No
We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.
Yes
We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT's wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.
Yes
We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.
No
We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.
As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the

jurisdictional limitations of the FPA.

Individual

Steve Eldrige

Umatilla Electric Cooperative

No

First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT) has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: "once a facility is classified as local distribution, the facility will be excluded from the [BES] unless changes to the system warrant a review of the determination." Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute

is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Further, we support the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the

proposed definition from its initial proposal by eliminating the use of terms such as “Generation” that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as “Facility” that include “Bulk Electric System” as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase “Bulk Electric System” as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT’s use of defined terms such as “Element,” “Real Power,” and “Reactive Power.”

Yes

We support the SDT’s attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. We note that the WECC Bulk Electric System Definition Task Force (“BESDTF”) has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC’s BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.

No

Specific language change: Change 20 MVA to 100 MVA The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the “bulk-power system” unless they produce “electric energy” that is “needed to maintain transmission system reliability.” 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is “needed to maintain transmission system reliability.” Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because “there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria.” Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are “needed to maintain transmission system reliability,” the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered “the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable.” Id. The SDT’s reasons for reaching this conclusion are not well-explained, but apparently the concern is that a “non-contiguous” BES could create “reliability gaps.” This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a “contiguous” BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC’s Standards Drafting Team for Project 2010-07 and its predecessor, the “GO-TO Task Force.” The Project 2010-07 Team was formed to address how the

dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a "contiguous" BES. On the contrary, because Section 215 allows reliability standards to be applied to "users" of the bulk system as well as "owners" and "operators," local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application for particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a "contiguous" or "non-contiguous" BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.

No

We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.

No
We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.
Yes
We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT's wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.
Yes
We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.
No
We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.
As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.
Individual
Marc Farmer
West Oregon Electric Cooperative
No
First, thank you for the opportunity to comment on the draft Proposed Continent-wide Definition of the Bulk Electric System (BES). We appreciate the work that the Standards Development Team (SDT)

has put into a new definition so far and believe the draft is a step in the right direction. We also understand the relatively short timeframe that NERC is working under in order to create a new BES definition to submit to FERC for approval before the imposed deadline. That said, we believe that the draft definition needs significant revision before NERC files it with FERC for approval. In response to question #1, we recommend that NERC revise the draft BES definition so that the first paragraph reads as follows: "Bulk Electric System (BES): Includes anything that meets each of the following three (3) criteria: (1) (a) Is a facility or control system necessary for operating an interconnected electric energy transmission network (or any portion thereof), or (b) Is electric energy from generation facilities needed to maintain transmission system reliability; AND (2) Is not a facility used in the local distribution of electric energy as determined by the Seven Factor Test set out in FERC Order 888; AND (3) (a) Unless included or excluded in subpart (b), is i. A Transmission Element operated at 100kV or higher; or ii. A Real Power Resource identified in subpart (b); or iii. A Reactive Power resource connected at 100kV or higher; (b) [the list of inclusions of exclusions in the draft, as modified by our comments below]" Criteria (1) and (2) of these revisions would capture the limitations on what may be included in the BES due to the jurisdictional limits that Congress placed on FERC, NERC, and the Regional Entities in developing and enforcing mandatory reliability standards. Specifically, Section 215(i) of the Federal Power Act provides that the Electric Reliability Organization (ERO) "shall have authority to develop and enforce compliance with reliability standards for only the Bulk-Power System." Section 215(b)(1) of the FPA, 16 U.S.C. § 824o(a)(1) (emphasis added). Section 215(a)(1) of the statute defines the term "Bulk-Power System" or "BPS" as: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy." Id. With this language, Congress expressly limited FERC, NERC, and the Regional Entities' jurisdiction with regard to local distribution facilities as well as those facilities not necessary for operating a transmission network. Given that these facilities are statutorily excluded from the definition of the BPS, reliability standards may not be developed or enforced for facilities used in local distribution, and therefore the definition of the BES may not include such facilities. In Order No. 672, FERC adopted the statutory definition of the BPS. See Order No. 672, FERC Stats. & Regs. ¶ 31,204 (2006). In Order No. 743-A, issued earlier this year, the Commission acknowledged that "Congress has specifically exempted 'facilities used in the local distribution of electric energy'" from the BPS definition. See Order 743-A, 134 FERC ¶ 61,210 at P. 25 (2011). FERC also held that to the extent any facility is a facility used in the local distribution of electric energy, it is exempted from the requirements of Section 215. Id. at P.54. In Order No. 743-A, FERC delegated to NERC the task of proposing for FERC approval criteria and a process to identify the facilities used in local distribution that will be excluded from NERC and FERC regulation. Id. at P 76. The critical first step in this process is for NERC to propose criteria for approval by FERC to determine which facilities are not BPS facilities and therefore not BES facilities. Accordingly, it is critical that NERC create a definition of the BES that first excludes facilities used in local distribution. In Order No. 743-A, the Commission confirmed this, stating: "once a facility is classified as local distribution, the facility will be excluded from the [BES] unless changes to the system warrant a review of the determination." Order No. 743-A, at P 71 (emphasis added). We believe that the Seven Factor is the appropriate means to determine whether a facility is used in the local distribution of electricity and therefore should be referenced in the definition of the BES. This is the test that applies elsewhere to determine whether facilities qualify as local distribution, and therefore there is strong and clear precedent for using it in the BES definition. See 334 F.3d 48. In fact, the statutory language in Section 201 of the FPA that led to the Seven Factor Test for other purposes is identical to the statutory language in Section 215 of the FPA at issue here. Well established rules of statutory construction call for interpreting identical language to produce similar meanings, therefore applying the Seven Factor Test under both sections of the statute is appropriate. And, without the Seven Factor Test as a means of determining what qualifies as local distribution facilities, there could be significant uncertainty and confusion as to whether certain facilities are part of the BES. Further, the Commission stated in Order 743-A that, "the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes, while also allowing NERC flexibility in applying the test or developing an alternative approach as it deems necessary." Id. at P 69. The Seven Factor Test includes the following factors: 1) Local distribution facilities are normally in close proximity to retail customers; 2) local distribution facilities are primarily radial in character; 3) power flows into local distribution systems, it rarely, if ever, flows out; 4) when power enters a local distribution system, it

is not re-consigned or transported on to some other market; 5) power entering a local distribution system is consumed in a comparatively restricted geographical area; 6) meters are based at the transmission/local distribution interface to measure flows into the local distribution system; and 7) local distribution systems will be of reduced voltage. Order No. 888 at 31,771. FERC precedent indicates that a utility does not have to meet every factor of the seven-factor test in order for their facilities to qualify as local distribution. California Pacific Edison Co., Order Granting in Part and Denying in Part Petition for Declaratory Order, 133 FERC ¶ 61,018, 61,075 (Oct. 7, 2010). NERC must also limit the BES to facilities or control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof) or electric energy from generation facilities needed to maintain transmission system reliability, as directed by the FPA. Similar to the local distribution exclusion, facilities not falling into either of these categories are not part of the BPS and therefore must be expressly excluded from the BES. In order to establish a process that is consistent with the FPA and NERC's delegated authority from FERC, the proper sequence of steps must be applied in the correct order to determine which facilities are subject to NERC and FERC jurisdiction in the first instance, and only then, from among the jurisdictional facilities, to determine which facilities and control systems must comply with the electric reliability standards. Our revisions to the BES definition would create such a process within the definition of the BES. It would ensure that entities would begin any analysis of whether a particular item qualifies as BES by asking, first, whether that facility is "necessary for operating an interconnected electric energy transmission network (or any portion thereof)" or is "electric energy from generation facilities needed to maintain transmission system reliability," and second, whether that facility is "used in the local distribution of electric energy." Only after addressing these questions might further analysis be appropriate. We understand, but disagree with, the argument that, because the FPA clearly excludes local distribution facilities and facilities necessary for operating an interconnected electric transmission network from FERC, NERC, and Regional Entity jurisdiction, it is not necessary to expressly exclude these facilities again in the definition of the BES. This approach might be legally accurate, but could lead to significant confusion for entities attempting to implement the new BES definition. There are numerous examples of Regional Entities, particularly WECC, attempting to include such facilities in the BES under the current BES definition, and regulated entities are not certain as to which facilities they should consider part of the BES. Clarifying FERC, NERC, and Regional Entity in the BES definition, even if such clarification is already provided in the FPA, would avoid such problems under the new definition. Criterion (3) of these revisions is necessary to resolve the ambiguity in the proposed definition as to whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart (b) modifies each provision of Subpart (a). Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart (b) of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Further, we support the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the FPA. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as "Generation" that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as "Facility" that include "Bulk Electric System" as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase "Bulk Electric System" as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT's use of defined terms such as "Element," "Real Power," and "Reactive Power."

Yes

We support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. We note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC's BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A & B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort.

No

Specific language change: Change 20 MVA to 100 MVA The inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted would improperly expand the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because "there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria." Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are "needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." This conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. We believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force." The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the

Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a "contiguous" BES. On the contrary, because Section 215 allows reliability standards to be applied to "users" of the bulk system as well as "owners" and "operators," local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application for particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a "contiguous" or "non-contiguous" BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.
No
We are concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.
No
We are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained.
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold lacks an

adequate technical justification. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit should be eliminated.
Yes
We strongly support the categorical exclusion of Local Distribution Networks from the BES. For reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are likely the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. We also support, with the reservations discussed below, the LDN exclusion as drafted by the SDT. We believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES. Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. However, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT's wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception. The 100 MVA threshold seems more in alignment with technical standards such as Power System Stabilizer requirements.
Yes
We strongly support the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory reliability standards. We agree that the small utilities covered by the proposed exemption would have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.
No
We agree that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing some local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed in our answer to Question 1, the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES.
As discussed in our answers to Question 1 and Question 11, the SDT proposal does not reflect the jurisdictional limitations of the FPA.
Individual
Kerry Robinson
Wells Rural Electric Company

Dear NERC Standards Drafting Team: Enclosed are Wells Rural Electric Company's comments on NERC's Proposed Continent-wide Definition of Bulk Electric System. We believe that NERC's proposed Continent-wide Definition of Bulk Electric System is proceeding in the right direction on this important topic but that more work needs to the done. We would like to thank the Standards Drafting Team for their hard work. We support the detailed comments of the Snohomish County Public Utility District and Pacific Northwest Generating Cooperative with regard to the questions posed by the Comment Form for Project 2010-17 Definition of BES. We would like to emphasize these portions of Snohomish's and PNGC's comments: • Question 1, both PNGC and Snohomish suggest that NERC start by adopting the statutory definition of the bulk power system as the core definition. We support that approach. That is, "(t) he term 'Bulk Electric System' means: (A) Facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and, (B) Electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy". See 16 U.S.C. § 824o(a)(1)." • Question 7, we support the exclusion for radial lines as drafted. • Question 9, we support the categorical exclusion of Local Distribution Networks from the BES as defined here, but with Snohomish's clarifications. • Question 10, we support exclusion E4, for small utilities, but we are unclear how small utilities are defined in the exclusion language presented here. • Question 11, we support the approach to exclusion of local distribution facilities discussed in the draft but repeat that more work should be done on the definition so that facilities used in local distribution are not swept up into the BES. The primary value of clearly defining the BES is for registration determinations. We realize that clearly defining the BES also has value in determining which standards apply to registered entities. If a registered entity does not own any Elements of the BES that that registered entity should be able to efficiently and effectively demonstrate an exception. We encourage NERC to support the use of the BES definition for registration-issues and to develop the exception procedure for registered entities that do not own or operate any Elements of the BES.
Group
City of Santa Clara, California, dba Silicon Valley Power
Jim Lauth
Yes
Yes, Silicon Valley Power agrees with proposed Exclusion E3 that "Local Distribution Networks (LDNs): Groups of Elements above 100 kV that distribute power to Load rather than transfer bulk power across the interconnected System," that are (among the other characterizations) "connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer load" should be specifically excluded from the Bulk Electric System definition. SVP also agrees with the majority of the characteristics of an LDN set forth in proposed Exclusion E3. However, SVP believes that alternative language may be more appropriate with respect to characteristic "b" of proposed Exclusion E3. Part "b" to proposed Exception E3 states "Limits on connected generation: Neither the LDN, nor its underlying Elements (in aggregate), includes more than 75 MVA generation." SVP submits that the use of a fixed level of generation to determine whether an entity qualifies as an LDN is too arbitrary and does not reflect engineering reality. If a fixed level of generation is used, it will often be too high, if the registered entity has a small system, or too low, when the registered entity has a large system. SVP submits that NERC should consider modifying part "b" to proposed Exception E3 to give the Regional Entities discretion to determine whether 75 MVA of generation is the appropriate benchmark for an individual utility. Therefore, SVP submits that with respect to draft exception E3 b), "Limited connected generation to the LDN or its underlying Elements (in aggregate),

as determined by the LDN's Regional Entity, using 75 MVA as a benchmark" may be appropriate. Alternatively, SVP submits that instead of a fixed level of generation, NERC could consider modifying the language of proposed Exception E3 b) to limit an LDN's connected generation to a high percentage of local minimum demand, or to a high percentage of generation not already committed to run to meet local reliability needs. Either option would meet the purpose of the LDN: a registered entity with connected generation that is, for the most part, only used to serve native or local load. SVP thanks NERC for the opportunity to comment on its 1st Draft definition of BES, and its proposed inclusions and exceptions.
Individual
Hertzel Shamash
Dayton Power and Light Company
No
Yes
Yes
Yes
No
Black start resources should not be included in this new proposal, which is being developed in response to FERC Orders 743 and 743A. These orders do not mention the inclusion of black start resources or cranking paths. These resources are undeniably important and we believe the existing CIP and other NERC standards applicable to them provide sufficient and appropriate safeguards. Their inclusion as BES elements would significantly increase the requirements for both distribution and 69kV cranking paths – which would be classed as BES elements and fall under all those requirements. Entities currently include multiple cranking paths for their restoration plans to improve the flexibility of their resources. However, if cranking paths are considered BES and must meet those requirements, they will default to a single cranking path which would potentially decrease their flexibility. The purpose of the bulk electric system is to accommodate the bulk movement of electricity through the interconnected system. In a black start situation, entities would NOT be interconnected and not moving bulk power. In light of the above, there is no sound basis for inclusion of these elements as part of the BES.
Yes
Yes
Yes
Yes
Yes
Yes
No

Individual
David Proebstel
Clallam County PUD No.1
No
As a general matter,Clallam County PUD supports the approach the Standards Development Team ("SDT") has taken to defining the Bulk Electric System ("BES"). In the comments we submit today, we identify several refinements we believe would improve the definition. We also discuss the legal framework the SDT must operate under as we understand it. But we support the SDT's conceptual approach and, if refined as we suggest, we will support the SDT's proposal so long as an acceptable process for defining exceptions accompanies the definition. As to the core definition addressed in Question 1, Clallambelieves the changes made in the revised definition are helpful and represent significant progress toward an acceptable definition. Nonetheless, we are concerned that the core definition is overly-broad and sweeps facilities into the BES that are required by the statute to be excluded, even considering the list of inclusions and exclusions. We therefore suggest two different approaches below that may achieve the SDT's aims more effectively than the proposed core definition. At a minimum, as we explain below, additional clarifications to the core definition are necessary and an acceptable exemption process is necessary to ensure that facilities that are required by statute to be excluded are excluded from the BES as defined by the SDT. At the outset,we urge the SDT to bear in mind the specific restrictions on the definition of "bulk-power system" contained in Section 215 of the Federal Power Act ("FPA") (Following FERC's guidance on the question, we treat the statutory term "bulk-power system" as equivalent to the term ordinarily used in the industry, "Bulk Electric System"). In Section 215(a)(1), Congress defined "bulk-power system" to mean "facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)" and "electric energy from generation facilities needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1). Congress unequivocally excluded from this definition "facilities used in the local distribution of electric energy." Id. The "bulk-power system" definition thus imposes a clear limit on the reach of the mandatory reliability regime. Congress reinforced that limit in Section 215(i), where it emphasized that the FPA authorizes the imposition of reliability standards "for only the bulk-power system." 16 U.S.C. § 824o(i)(1) (emph. added). Further, the SDT must bear in mind "the cardinal rule that a statute is to be read as a whole since the meaning of statutory language, plain or not, depends on context." City of Mesa v. FERC, 993 F.2d 888, 893 (D.C. Cir. 1993) (citation omitted). In considering how Congress used the term "bulk-power system" in the statute, as well as the limits on the reliability regime imposed in the surrounding statutory language, it is clear that Congress intended the "bulk-power system" to be defined narrowly so that it would incorporate only high-voltage, interstate facilities used to transmit power over long distances, whose failure threatens drastic reliability events such as cascading outages. These limitations are plain from, for example, the statutory definition of "reliability standard," which provides that reliability standards are to encompass only requirements to "provide for reliable operation of the bulk-power system." 16 U.S.C. § 824o(a)(3) (emph. added). Congress further refined the scope of reliability authority by specifically defining "reliable operation" to mean "operating the elements of the bulk-power systemwithin equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of such system will not occur as a result of a sudden disturbance. . . or unanticipated failure of system elements." 16 U.S.C. § 824o(a)(4). Congress's intent to focus the national reliability regime on broad-scale threats to the interconnected, interstate high-voltage system like cascading outages is made clear, as well, by Congress's specific direction that the mandatory reliability system is prohibited from enforcing standards for adequacy of service, which were left to state and local authorities. 16 U.S.C. § 824o(i)(2). When read in the context of the statute as a whole, the definition developed by the SDT should therefore focus on that portion of the interconnected bulk transmission grid for which thermal, voltage, and stability limits must be observed in order to prevent instability, separation events, and cascading outages. Further, in order to honor the specific limits placed on the definition by Congress, the SDT's definition must exclude facilities used in the local distribution of electric power and it must exclude facilities whose operation or mis-operation affects only the level of service and does not threaten cascading outages or other widespread events on the bulk interconnected system. Clallam is concerned that the SDT's proposed definition is overly-broad, and that it will sweep in many Elements that have little or no material impact on the reliable operation of the interconnected bulk transmission

grid. For example, the definition would sweep in all generators with 20 MVA capacity even though generators this small rarely create impacts on the interconnected bulk transmission system that would threaten to violate the thermal, voltage or stability limits of the bulk transmission system and therefore do not threaten instability, separation, or cascading outages on the interconnected transmission system. Accordingly, for the BES definition to conform to the requirements of the statute, the SDT must adopt an effective mechanism to exempt facilities like these that are improperly swept in by the SDT's brightline approach to inclusions and exclusions. For this reason, the Exception process to accompany the SDT's definition is of critical concern. It constitutes the last line of defense against a SDT definition that sweeps in facilities excluded by the statutory definition. Clallam believes the SDT can achieve the goals of FERC's Orders No. 743 and 743-A while honoring these statutory limits by taking one of two alternative approaches to the core definition. First, perhaps the simplest way the SDT could achieve the goals of FERC Order No. 743 while avoiding overbreadth that violates statutory limits is to simply adopt the statutory definition of "bulk-power system" as the core definition. This approach is commonly used by regulatory agencies in defining key jurisdictional terms to ensure that the agency does not cross statutory boundaries when carrying out the duties assigned to it by Congress. Under this approach, the core definition would simply echo the statutory definition, substituting "Bulk Electric System" for its statutory equivalent, "bulk-power system": The term 'Bulk Electric System' means: (A) Facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and, (B) Electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy. See 16 U.S.C. § 824o(a)(1). The inclusions and exclusions developed by the SDT, with the refinements we discuss below, would then be added to provide guidance in the application of this definition to specific classes of electric system facilities and Elements. A second alternative approach is to make the smallest possible adjustment to the current BES definition that suffices to address the central concern expressed by FERC in Orders No. 743 and 743-A. Those orders emphasized that FERC's concerns are with the initial phrase in the current NERC BES definition, which provides that the "Bulk Electric System" is: As defined by the Regional Reliability Organization, the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. In Order No. 743, FERC made clear that it views the italicized language as creating unreviewable discretion for Regional Entities to define the BES in their region, and that this unreviewable discretion, rather than lack of uniformity per se, is the problem Order No. 743 is designed to remedy. See, e.g., Order No. 743, 133 FERC ¶ 61,150 at P 16 (2010) (FERC believes the "best way to address these concerns is to eliminate the Regional Entities' discretion to define 'bulk electric system' without ERO or Commission review")(emph. added); id. at 30 (same). In Order No. 743-A, FERC clarified that the primary aim of its rulemaking was to eliminate this unreviewedregional discretion, and it was not, as FERC had originally proposed, to create a uniform national definition that does not allow for any regional variation.Order No. 743-A, 134 FERC ¶ 61,210 at P 11 ("We clarify that the specific issue the Commission directed the ERO to rectify is the discretion the Regional Entities have under the current bulk electric system definition to define the parameters of the bulk electric system in their regions without any oversight from the Commission or NERC.") (emph. added); id. at P 39 ("The Commission's suggested solution simply would eliminate regional discretion that is not subject to review by [NERC] or the Commission") (emph. added). Accordingly, the SDT could achieve the primary aim of Order No. 743 by simply rewriting the current definition to read: As defined by theUnless a different definition has been developed by the Regional Reliability Organization and approved by NERC and FERC, the Bulk Electric System is defined as the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at voltages of 100 kV or higher. If the SDT uses this suggested language as its core definition, it will have addressed FERC's primary concern with a minimum of disruption to the current NERC system of definitions. The definition could then be further elaborated with the list of specific inclusions and exclusions of Elements and systems (modified as discussed below), to provide more specific guidance to the industry. If the STD elects not to adopt one of the above suggestions, the core definition proposed on April 28 requires clarification. Specifically, as drafted, the proposed definition is ambiguous in that it is not clear whether the clause "unless such designation is modified by the list shown below" modifies only the preceding clause ("Reactive Power resources connected at 100 kV or higher") or the entire definition. To eliminate this ambiguity, we suggest that the proposed definition be reordered to read as follows: Bulk Electric System (BES): (A) Unless included or excluded in subpart B, the Bulk Electric System consists of: (1) all Transmission Elements operated at

100 kV or higher; (2) Real Power resources identified in subpart B; and, (3) Reactive Power resources connected at 100 kV or higher. (B) [the list of inclusions and exclusions, modified as discussed in our responses to questions 2 through 9]. Rearranging the definition in this way should make clear that the list of inclusions and exclusions that would be inserted as Subpart B modifies each provision of Subpart A. Thus, for example, even if a Transmission Element is otherwise included by virtue of operating at 100 kV or higher, it is nonetheless excluded if specifically addressed in the list of exclusions that would be incorporated as subpart B of the definition (if, for example, the Element qualifies as a Local Distribution Network). The rearrangement of the language eliminates any argument that the phrase "unless such designation is modified by the list shown below" does not modify "all Transmission Elements operated at 100 kV or higher" because of its placement at the end of the independent clause "Reactive Power resources connected at 100 kV or higher." Clallam supports the use of the phrase "Transmission Elements" as the starting point for the base definition because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the use of the term "Transmission" makes clear that the Bulk Electric System includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. As discussed above, the definition must exclude facilities used in local distribution in order to comply with the limits placed on NERC authority by Congress in Section 215 of the Federal Power Act ("FPA"), 16 U.S.C. § 824o. For similar reasons, we believe the SDT has improved the proposed definition from its initial proposal by eliminating the use of terms such as "Generation" that are not specifically defined in the NERC Glossary of Terms and by eliminating terms such as "Facility" that include "Bulk Electric System" as part of their definition. Eliminating the use of such terms helps sharpen the core definition. If a key term is undefined, incorporating it into the definition only begs the question of how the incorporated term is defined. If a currently-defined term uses the phrase "Bulk Electric System" as part of its definition, incorporating that term into the BES definition creates a confusing circularity. We therefore support the SDT's use of defined terms such as "Element," "Real Power," and "Reactive Power."

No

In concept, we support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. In this regard, we note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams denoting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. See WECC BES Definition Task Force Proposal 6, Appendix C (available at: http://www.wecc.biz/Standards/Development/BES/default.aspx). Similarly, the FRCC's BES Definition Clarification Project has devoted considerable effort to developing one-line diagrams of transmission and distribution Elements, and identifying the point of demarcation between BES and non-BES Elements. See FRCC BES Definition Clarification Project Version 4, Appendices A& B (available at: https://www.frcc.com/Standards/BESDef.aspx). Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort. Also, the reference to "two windings of 100 kV or higher" may create some confusion because many three-phase transformer bankshave 6 or 9 windings, depending on whether the transformer has a tertiary. We suggest clarifying this provision by changing the clause referencing two windings to read: "the two highest voltage transformer windings of 100 kV per phase that are connected to the Bulk Electric System."

No

Clallam is concerned that the inclusion of individual generation units with a nameplate capacity as small as 20 MVA is over-inclusive. Under FPA Section 215,generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." 16 U.S.C. § 824o(a)(1)(B). Smaller generators with a capacity of 20 MVA almost never produce electricity that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted improperly expands the BES definition to include generators that the statute requires to be excluded. Further, the 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of

the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because "there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria." Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are "needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Id. The SDT's reasons for reaching this conclusion are not well-explained, but apparently the concern is that a "non-contiguous" BES could create "reliability gaps." But this conclusion cannot be supported as an abstract proposition, but can only be demonstrated by a careful examination how application of reliability standards will change depending on how the BES is defined. In fact, we believe that if the SDT insists on a "contiguous" BES, an over-inclusive definition will result. We base these conclusions on the findings of NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force.". The Project 2010-07 Team was formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. After reviewing these questions in considerable depth, the Team concluded that dedicated high-voltage interconnection facilities need not be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. On the contrary, the team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the predecessor of the Project 2010-07 SDT). Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Developoment Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe the many of the questions considered by the Project 2010-07 Team are analogous to the questions under consideration by the SDT, and that, if the SDT insists upon a "contiguous" BES, the resulting definition will be substantially over-inclusive. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of facilities that have little or nothing to do with bulk system reliability, resulting in wasted regulatory expense and additional stress on the limited resources of reliability regulators. For example, a "contiguous" BES would require dedicated interconnection facilities that connect a BES generator to BES transmission facilities to be classified as BES. But, as the discussion above demonstrates, the classification of dedicated interconnection facilities as "BES" facilities would, based on the findings of the Project 2010-07 SDT, result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES

“Transmission” facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability. There is no good reason for the SDT to adopt a “contiguous” BES. On the contrary, because Section 215 allows reliability standards to be applied to “users” of the bulk system as well as “owners” and “operators,” local distribution systems operating UFLS relays and other bulk system protection devices could be required to comply with standards governing those devices as a precondition for their use of transmission on the bulk system. The other alternative is to draft standards that apply to a specific type of equipment – again UFLS relays is a good example – rather than to BES facilities categorically. Either approach will fully achieve the goals of bulk system reliability without imposing an undue regulatory compliance burden on local distribution systems. For these reasons, we urge the SDT to follow the example of the Project 2010-07 Team and the GO-TO Task Force by giving careful consideration to the specific and practical results of how its definition will affect the application fo particular reliability standards and whether the results are beneficial to reliability or simply result in unnecessary regulatory burdens that do not benefit bulk system reliability. We believe there is considerable danger of error if the SDT bases its conclusions on metaphysical debates about whether a “contiguous” or “non-contiguous” BES is more desirable rather than engaging in a careful analysis of whether the proposed definition achieves reliability goals in the most efficient manner possible.
No
Clallam is concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy “needed to maintain transmission system reliability” and are therefore properly included in the BES definition.
Yes
Including “all” blackstart and blackstart cranking paths in the BES may ultimately provide an incentive to the electric industry to reduce the number of resources with blackstart capability. We therefore suggest that essential blackstart resources identified by the Regional Entity should be included in the Bulk Electric System, but non-essential blackstart resources need not be.
No
Clallam agrees that it is important to address wind generation facilities and similar generation facilities in which a large number of generating units, each with a relatively small capacity, are clustered and fed into the grid at a single interconnection point. That being said,Clallam is concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained. We believe the exclusion as drafted adequately defines radials.
No
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold (through reference to Inclusion I2) lacks an adequate technical justification in this context. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit (“standby, back-up, and maintenance power…”) should be eliminated.
Yes
Clallam strongly supports the categorical exclusion of Local Distribution Networks from the BES. In fact, for reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are, of course, probably the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. Clallam also supports, with the reservations discussed below, the LDN exclusion as drafted by the SDT. At least conceptually, we believe the SDT has identified the key characteristics that separate LDNs from facilities that are part of the bulk transmission system and therefore should be classified as BES.

Hence, LDNs can be excluded from the BES based on the characteristics identified by the SDT without compromising the reliability of the interconnected bulk transmission system. Although Clallam supports the LDN exclusion, we believe the exclusion should be refined in the following respects: • The SDT's draft states that: "LDN's are connected to the Bulk Electric System (BES) at more than one location solelyto improve the level of service to retail customer Load." (emphasis added) We are concerned that the use of the term "solely" implies the need for an examination of the motives of a local distribution utility in connecting to the BES at more than one location. This result is problematic because it defeats the purpose of the exclusion, which is to allow LDNs to be excluded from the BES without an in-depth and expensive inquiry into the exact nature of the LDN. In addition, the local utility may have a number of motives for connecting to the BES at more than one location, but the local utility's motives have nothing to do with how the LDN interacts with the interconnected bulk system, which should be the key determinant in including or excluding any Element from the BES. With these concerns in mind, we therefore recommend that the SDT revise the sentence quoted above as follows: "LDN's are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load and not to accommodate bulk transfers of power across the interconnected bulk system." By instituting this suggestion, the SDT would emphasize the key difference between an LDN, which is designed to reliably serve local, end-use retail customers, and the BES, which is designed to accommodate bulk transfer of power at wholesale over long distances. • We believe the characteristics specified by the LDN in subsections (b) and (c) of the exclusion are redundant. Subsection b specifies that the LDN would not interconnect more than 75 MVA of generation in aggregate. Subpart c specifies that power flows only into the LDN. We believe the SDT can eliminate subpart b of the definition and simply rely on subpart c because if power only flows into the LDN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system, only with the LDN. Further, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LDN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the subpart c criteria, would be wholly absorbed within the LDN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. In addition, the 75 MVA criterion would make an LDN interconnecting more than 75 MVA part of the BES. For the reasons set forth by the Project 2010-07 SDT, we are concerned the result will be the local utility being improperly classified as a Transmission Owner and Transmission Operator, which would subject the local utility to a number of reliability standards that would significantly increase its compliance burden without substantially improving bulk system reliability. In fact, in the LDN situation, there is even less reason to impose these burdens on the local utility than in the situation addressed by the Project 2010-07 team, where generators are interconnected to the BES by dedicated interconnection facilities. Because the LDN is interconnected at multiple points, the generators interconnected to the LDN could continue to operate even if one or two interconnection points are out of service. On the other hand, in the situation addressed by the Project 2010-07 team, if the dedicated interconnection facility is out of service, the generation is unavailable because there is no alternative route to deliver it to load. Finally, for the reasons stated in our answers to Questions 3 and 4, we believe the SDT's wholesale adoption of the 20 MVA and 75 MVA thresholds from the NERC Statement of Compliance Registry lacks adequate technical justification. The SDT repeats that error here by incorporating those thresholds into the LDN exception.
Yes
Clallam County PUD supports the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that can ill afford the substantial costs that accompany imposition of mandatory compliance with reliability standards. Further, we agree that the small utilities covered by the exemption will have no measurable impact on the operation of the interconnected BES. Our views are borne out by experience in the Pacific Northwest where many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.
No

While Clallam County PUD agrees that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing most local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed at greater length in our answer to Question 1, Clallam believes that the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES. To give a further example, assume that a local distribution utility operates a distribution network that currently would be excluded from the SDT's definition, but that a cogeneration facility with a capacity of 30 MVA and average production of 15 MVA is constructed in one of the industrial areas served by local distribution facility and the output is purchased by one of the industrial customers. Because of inclusion I2, the local utility would now be classified as owning BES facilities, even though the output of the generator rarely exceeds 20 MVA in practice and the output is, as a matter of physics, absorbed by the surrounding industrials loads rather than being transmitting onto the interconnected grid. Further, the fundamental nature of the local distribution facilities has not changed. They are still used to deliver electric power to the utility's end-use customers, not to deliver power on the wholesale market across the interconnected bulk grid. Hence, the result of the SDT's definition is to include "facilities used on the local distribution of electric energy" in contravention of FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). The practical result of the improper classification would be that the local utility would be required to register as a Transmission Owner and Transmission Operator, and would incur substantial costs to comply with requirements that are designed to ensure the reliable operation of transmission lines that are part of the interconnected grid, not local distribution facilities. For the reasons explained in the papers published by the Project 2010-07 Task Force, the result is substantially increased compliance costs that produce little or no improvement in the reliability of the interconnected bulk system. Accordingly, if viewed in isolation, the SDT's core definitions and list of inclusions/exclusions do not comply with the statute or produce optimum benefits for bulk system reliability. Whether the SDT's approach complies with the statute can only be determined by examining the Exception process now under development, in conjunction with the SDT's definition. If the Exception process results in the exclusion of facilities that are improperly swept into the BES by the bright-line thresholds included in the SDT's definition, and the exclusion can be accomplished at a reasonable cost to the involved entities, then the SDT will have achieved a result that complies with the statute. But this conclusion can be reached only upon review of the entire package, not just the core definition and list of inclusions/exclusions. In this regard, as discussed in our answer to Question 3, Clallam notes that exclusion of facilities from the BES does not mean that owners of those facilities are entirely exempt from reliability standards. On the contrary, the statute provides that "users" of the BES can be subject to reliability regulation. 16 U.S.C. § 824o(b). Hence, even where an entity does not own BES assets, it could be required to, for example, provide necessary information to the applicable Reliability Coordinator and to participate in the regional Under-Frequency Load Shedding program by setting the UFLS relays in its Local Distribution Network at the appropriate settings. We note that participants in the WECC BES Task Force generally agreed that appropriate information should be provided by non-BES entities, although there was considerable concern related to ensuring that the provision of information was not unduly burdensome.
Yes
As noted in our responses to Question 1 and Question 11, we believe the SDT proposal is potentially in conflict with the limitations of the Federal Power Act, and in particular the statutory exclusion for facilities used in the local distribution of electric energy. Unless the SDT adopts some approach other than a core definition with inclusions and exclusions based on brightline thresholds, the SDT's approach can meet the statutory requirements only if the Exception process currently under development results in facilities that are not properly classified as BES being exempted from regulation as BES facilities.
Clallam County PUD has these additional concerns: • The current definition provides that "Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process." Clallam is concerned that the SDT carefully delineate which entity has the burden of proof in the exclusion process. The WECC BES Task Force approach, which we commend to the SDT, laid out these burdens in some detail. Under that approach, essentially, if a facility is excluded from the BES by virtue of the specific exclusions listed in the definition, the Regional Entity bears the burden of proving that the facility nonetheless has a material impact on the interconnected bulk transmission system and therefore should be included in the BES. On the other hand, if a facility is classified as

BES by virtue of the list of inclusions set forth in the BES definition, it can still escape classification as BES, but bears the burden of demonstrating that its facility has no material impact on the interconnected transmission system. We urge the SDT to give careful consideration to these burden-of-proof questions and to follow the lead of the WECC BES Task Force. • For the reasons we have explained in our answer to Question 11, we believe the exemption process is critical both to ensure that the BES definition is effective in producing measurable gains to bulk system reliability and to ensuring that the definition will comply with the limitations Congress placed in Section 215. Hence, we believe the entire BES definition, including the exemption process and related procedures, should be vetted through the NERC Standards Development Process, including the full comment periods and a ballot approvals provided for in that process. We are concerned that important elements of the BES definition have been assigned to the Rules of Procedure Team, and that changes in the Rules of Procedure are subject to approval in a process that provides considerably less due process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). Accordingly, we urge that all elements of the BES definition, including those elements that have been assigned to the Rules of Procedure Team, be vetted through the Standards Development Process. Further, we believe that the failure to vet all material elements of the BES definition through the Standards Development Process would constitute a violation of NERC's bylaws and the requirements of the Standards Development Process.
Group
Overton Power District No. 5
Randall Ozaki
No
The term does not include facilities used in the local distribution of electric energy.
No
clarification is needed to identify which transformers to include in the BES
Yes
Yes
No
No
Yes
Yes
No
we support Snohomish's clarifications
Yes
We support exclusion E4, for small utilities, but we are unclear how small utilities are defined in the exclusion language presented here.
No
Facilities used in local distribution should not be swept up into the BES
No
Group
Tennessee Valley Authority

Richard Dearman
Yes
No
We suggest I1 to read, “Transformers, other than generator step-up (GSU) transformers, including phase angle regulators, having two windings of 100 kV or higher, unless excluded under Exclusions E1 or E3. Transformers having only one winding of 100 kV or higher are excluded.”
No
Other than the NERC Registry Criteria definition, what is the technical justification for the 20 MVA threshold? The threshold level for inclusion should be technically based on the BES capacity and configuration at the location of the generating source’s connection to the BES.
No
Other than the NERC Registry Criteria definition, what is the technical justification for the 75 MVA threshold? The threshold level for inclusion should be technically based on the BES capacity and configuration at the location of the generating sources’ connection to the BES.
Yes
No
Other than the NERC Registry Criteria definition, what is the technical justification for the 75 MVA threshold? The threshold level for inclusion should be technically based on the BES capacity and configuration at the location of the generating sources’ connection to the BES.
No
We suggest the first statement in E1 to read, “Any radial system connected to a single BES transmission source, operating with an automatic interruption device, including the facilities between the connection to the transmission source and the automatic interruption device which are within the transmission source’s zone of protection, and:”
No
We suggest adding a reference to “I5” in the (i) section as follows: “the net capacity provided to the BES does not exceed the criteria identified in the inclusions I2, I3, or I5.”
No
The following comments are specific to subsections of E3: Section (c): We suggest the section to read, “Power flows out of the LDN shall not exceed the limitations imposed in Inclusions I3 and I5.” Section (d): We suggest the section be read, “Not used to transfer bulk power: The LDN is not used to transfer energy originating outside the LDN for delivery through the LDN, except for the power flowing in a normally open switching device between radial systems operating in a make-before-break fashion as defined in exclusion E1.”
Yes
No
We cannot be certain of the effect of the BES definition on distribution facilities until our comments to the inclusions and exclusions above are considered.
No
No additional concerns.
Individual
Matt Morais
Electric Reliability Council of Texas, Inc.
No
ERCOT ISO suggests a different approach. In order 743, to remedy its concerns, FERC suggested eliminating RE discretion in defining the BES, and instead basing it upon a bright-line 100kV threshold, provided that elements above and below 100kV could be excluded and included, respectively, based on specific procedures. Consistent with that approach, ERCOT ISO suggests that

the BES definition itself establish a bright line standard, with inclusions and exclusions managed through the exception process (the exception process allows for both exclusions and inclusions of relevant facilities/equipment). With respect to exclusions (and inclusions), FERC contemplated a process involving stages that established “exclusion” criteria in the first instance. If equipment met such criteria, the process ended there and it was excluded or included, as appropriate. If the equipment did not meet the bright-line criteria, then it moved to the “exception” analysis, which contemplated additional critical analysis to determine if exemption was warranted. ERCOT ISO believes that structuring the revised definition in accordance with this approach is more consistent with FERC’s intent of having an inclusive definition in the first instance, with modifications occurring subsequently pursuant to critical analysis in a well defined exception process. Revising the BES definition consistent with the above principles would counsel in favor of revisions to the current definition that removed RE discretion and provided for inclusion or exclusion on a case by case basis. ERCOT ISO also believes that the BES definition should provide for a general exclusion of distribution facilities. In Orders 743 and 743-A, FERC made clear that, consistent with the terms of EPAct 2005, distribution systems were excluded from the BES. However, FERC also made clear that it reserved the right to judge whether something was distribution or transmission, and, therefore, subject to its jurisdiction. Consistent with FERC’s findings in this regard, ERCOT ISO believes that the definition should provide the general exclusion, with specific exclusions being performed as part of the exception process. This will meet the goal of respecting Congress’ exclusion of distribution facilities, while ensuring the distribution/transmission distinction is subject to clear, objective standards the application of which can be critically reviewed by FERC to provide the appropriate procedural and substantive checks FERC envisions to ensure its jurisdiction is applied in all relevant cases to facilitate enhanced system reliability. In addition, ERCOT ISO supports memorializing the generation registration criteria in the BES definition. However, consistent with the approach described above, the BES definition should not be characterized in terms of inclusions or exclusions, but rather as general thresholds, with modifications occurring solely pursuant to the exemption process. Finally, with respect to generation, ERCOT ISO questions the 75 MVA threshold applied to collector system type generation. As indicated by the SDT, this was intended to capture renewable resources (e.g. wind), and ERCOT ISO agrees with this clarification, but questions whether the 20 MVA threshold should apply. These systems can include multiple wind turbines on the collector system, but when they are interconnected at a single point, they are viewed as a single resource and, as such, should be subject to the same 20 MVA threshold as other single units. Applying the approach described above, the BES definition would reflect general thresholds. Specific circumstances warranting exception would occur via a separate process – ERCOT ISO is not disagreeing with any of the SDT’s inclusions or exclusions, it is merely suggesting that they be addressed in that separate process. Consistent with this approach, ERCOT ISO offers the following language: The Bulk Electric System shall include: A) all Transmission Elements operated at voltages100 kV or higher; B) all generation resources that: 1) are individual units greater than 20 MVA; 2) multiple units at a single facility that are equal to or greater than 75 MVA in the aggregate, provided that all units have a common point of interconnection; and 3) multiple units connected to a collector system that are equal to or greater than 20 MVA in the aggregate; 4) all Blackstart Resources; and C) Reactive Power resources connected at 100 kV or higher. The BES shall not include distribution facilities, and radial transmission facilities serving only load with one transmission source are generally not included in this definition. The foregoing notwithstanding, any relevant element (e.g. transmission, generation, etc.) may be included or excluded in the BES pursuant to the relevant exception processes criteria and analyses as provided for in the NERC Rules of Procedure.
No
ERCOT ISO agrees that such equipment should be considered for inclusion, but suggests that these issues be addressed relative to the criteria for evaluation in the exception process. In other words, this inclusion doesn’t need to be explicitly identified. It would simply be included under the general 100 kV threshold, and to the extent an owner believed the characteristics of its equipment don’t warrant inclusion, it would seek an exception.
No
See response to question 1. ERCOT ISO supports redefining generation covered under the BES to reflect the registration threshold, but, consistent with the comments to question 1, believes it should be included within the bright line criteria unless otherwise indicated by application of the inclusion and exclusion criteria of the exception process or analyses.

No
See response to question 3 – ERCOT ISO agrees with substance, but not the approach.
No
See response to question 3 – ERCOT ISO agrees with the substance, but not the approach.
No
See response to question 3 – ERCOT ISO agrees with the substance but not the approach.
No
See response to question 1 – while ERCOT ISO does not necessarily disagree with the substance of the proposed exclusions, it believes all exceptions should occur pursuant to the separate processes and criteria being developed that will be established in the NERC ROP. The BES definition should be more general in nature, focusing on objective thresholds. All exclusions should be addressed in the separate proceeding being conducted in parallel with this proceeding to develop the exception process, and ERCOT ISO reserves its right to comment on the substance of such proposals in that proceeding.
No
See response to question 7.
No
See response to Question 7.
No
These entities should be subject to the exception process. They may warrant “first instance” exclusion in that process, but any such action should occur there, as opposed to the definition of BES. ERCOT ISO believes this is more consistent with FERC’s position that BES should reflect an objective threshold, with exceptions being subject to review by the ERO and FERC, as applicable. Accordingly, ERCOT ISO suggests that this issue be raised in the concurrent BES exception proceeding and ERCOT ISO reserves its right to comment on the substance in that proceeding.
No
See response to question 1 – ERCOT ISO agrees that distribution facilities should be excluded, and such facilities are generally excluded in ERCOT ISO’s proposed alternative definition. However, FERC stated in 743 and 743-A that it has the right to determine if facilities are distribution or transmission. Accordingly, to respect the FPA explicit exclusion of distribution facilities and FERC’s authority to determine if a facility is transmission or distribution, ERCOT ISO position is that the general exemption should be in the BES definition, but any such exemptions must be subject to the exemption process to facilitate FERC’s authority to make the relevant determination. With respect to that process, it may provide for a presumptive exclusion with additional at FERC’s discretion. ERCOT ISO reserves its rights to comment on the criteria for exclusion/exemption/inclusion in that proceeding. In addition, the exception process should provide for the ability to include certain distribution facilities if the inclusion criteria of the exception process indicate such action is appropriate.
Yes
See response to question 1 – ERCOT ISO believes defining BES in terms of the relevant exclusions may be contrary to FERC’s suggested approach in 743 and 743-A. While FERC did not mandate a particular approach, and gave the ERO the opportunity to propose an alternative to its suggested approach, it stated that any alternative must be equal to or greater than its suggested approach in terms of remedying the identified flaws associated with the current definition. Part of the remedy envisioned by FERC included the removal of subjectivity in defining BES and the ability of the ERO and FERC to review any proposed exemptions from the bright line definition. Although the exclusions strive to apply objective criteria, it is arguable that any such circumstances may not be that clear and may require some level of subjective judgment as to whether elements deemed to be distribution according to the exclusion criteria actually are distribution, as opposed to transmission. In addition, FERC expressly stated that it reserved the right to make that determination in the first instance. This approach takes that away from FERC.
Group
Arizona Public Service Company

Janet Smith
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
No
No.
Individual
Martin Kaufman
ExxonMobil Research and Engineering
No
The SDT's attempt to create a structure that clarifies what types of facilities should be included / excluded from the bulk electric system is a positive step; however, the utilization of an automatic fault interrupting device as the end point criteria for bulk electric and start point for local distribution is inappropriate. The Federal Power Act specifically excludes all "facilities used in the local distribution of electric energy" from the bulk power system without mention of how these facilities are isolated from the transmission system.
Yes
Yes
Support is contingent on the continued exclusion of generation based on its net capacity provided to the BES.
Yes
Support is contingent on the continued exclusion of generation based on its net capacity provided to the BES.
Yes
Yes
No

The inclusion or exclusion of radial lines serving load should not be contingent on whether the radial line is isolated by a single automatic fault interrupting device. Many of the radial lines impacted by the requirement for the presence of an automatic fault interrupting device are industrial companies that are fed via 138 kV and 230 kV systems that are hard-tapped or fed from breaker and a half or ring buss transmission substations. The requirement for the installation of an automatic fault interrupting device on the radial line is predicated on the assumption that an event on a hard-tapped line serving load will produce a negative impact on the interconnected transmission network. Accepting this assumption as a true fact, the SDT is following the logic that they should expand the scope of the interconnected transmission network to include the hard-tapped line (used to locally distribute power) due to the fact that the transmission owner has neglected to properly protect their facilities from the impact of an event on the hard-tapped line. In effect, the SDT is allowing the transmission planner to take credit for protective devices installed on the distribution network when they conduct their contingency studies as part of NERC Reliability Standards TPL-002 and TPL-003; thus shifting the responsibility of protecting the interconnected transmission network from the owners of the transmission network to the customers and their local distribution facilities. The SDT should revisit their assertion that facilities should be included based on the presence of an automatic fault interrupting device based on the fact that if a contingency study indicates that an automatic fault interrupting device should be present in order to preserve system stability or prevent a cascading outage during an N-1 or N-2 contingency, the transmission planner should be recommending such a device is installed on the interconnected transmission system and not a customer owned facility or any facility used to locally distribute electric power. It is inappropriate to let transmission owners take credit for customer owned and local distribution facilities in their reliability studies and require customer's and local distribution facilities to protect the interconnected transmission network when those facilities are explicitly excluded from the bulk power system in Section 215 of the Federal Power Act and the interconnected transmission system is owned and operated by entities that the customers and local distribution facility owners pay to provide them with reliable transmission service.
Yes
No
Similar to the comments provided on Exclusion E1, the inclusion of a requirement for automatic fault interrupting device to separate the local distribution network from the interconnected transmission network will in many cases shift the onus of securing a reliable interconnected transmission network from the owners and operators of that interconnected transmission network to the customers and owners of local distribution networks that pay the owners and operators of the interconnected transmission network a fee for providing reliable transmission services. Furthermore, the Federal Power Act excludes all facilities used in the local distribution of electric energy and does not distinguish whether such local distribution facilities must be isolated by automatic fault interrupting devices.
No
While the exclusion for a small utility makes sense, the exclusion should not be limited to a utility company. The SDT should extended the exclusion to similarly situated facilities or organizations with other primary business functions, such as industrial companies.
No
The SDT has defined a specific type of local distribution facility in their bright-line definition of the bulk electric system. The SDT's definition focuses on a specific type of local distribution system that has a minimum impact on an interconnected transmission system when that interconnected transmission system does not include the facilities necessary to properly protect itself from faults originating on its boundary. Section 215 of the Federal Power Act does not qualify the type of local distribution facility that should be excluded. It exempts ALL facilities used in the local distribution of electric energy, regardless of whether the owners and operators of the interconnected transmission system have installed facilities that are necessary to secure the reliability of the interconnected transmission system from incidents originating at its boundaries. Additionally, the SDT should consider making its definition of a local distribution network consistent with exclusion E2. If a generation facility with a net aggregate rating less than 75 MVA or single unit with a net export capacity below 20 MVA is not a part of the bulk electric system, what is the technical justification of including a local distribution network that exports less than 75 MVA in the bulk electric system when it

is not used to transmit electric energy between geographic regions? Many QFs and large industrial facilities may fall under the description of local distribution network due to the breadth of their private use network, connection to mulitple 138 kV / 230 kV substations (done to improve reliability in order to provide safer operation of the industrial process), and possible cyclical generation exports (sometimes exporting / sometimes importing).
Yes
Section 215 of the Federal Power Act excludes facilities used in the local distribution of electric energy without any qualifications of the type of local distribution facility.
There are certain transmission network configurations in the south east portion of the country where the majority of the interconnected transmission network is owned and maintained by a single utility company, but approximately one hundred substations that are located along the interconnected transmission network and utilized to transmit power between regions are owned by separate companies (i.e. many companies own a single transmission substation). The SDT should consider this configuration and the lack of uniform operation and maintenance practices that may exist due to the differences in how the companies implement NERC compliance.
Individual
Laura Lee
Duke Energy
Yes
Yes
Yes
Yes
Yes
No
I5 is not defined clearly enough. It appears that distributed generators connected to a 44 kV load pocket that is fed radially from a 100 kV source would be included, but it's not clear that this was the intent. Adding generator before collector system would provide greater precision.
No
This needs further clarification as to what constitutes a "single Transmission source". Does having a double/multiple circuit line(s) from a single transmission station constitute a radial system?.
Yes
Yes
Yes
No
Group
Imperial Irrigation District
Sammy Alcaraz
Yes
Yes

Yes
Yes
Yes
No
In reference to I5 If the collector system is in the distribution system and after a series of elements and (sub transmission system) is connected to a common point of interconnection to a system element at a voltage of 100 kV and above, is there a criteria of after how many elements before it connects to a system element at a voltage of 100 kV and above is I5 still applicable? IID prefers the following language: Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) after the collector system to the first system Element at a voltage of 100 kV or above.
Yes
Yes
Yes
Yes
Yes
No
None
Individual
Curtis Klashinsky
FortisBC
Yes
We agree with the concept of a bright-line definition and commend the SDT for developing a concept of explicit inclusions and exclusions as part of the definition. This will reduce the number of exception applications for some of the BES elements. However, the inclusion and exclusion requirements are extremely restrictive. For example, radial characteristics should not be limited by the amount of installed generation or single transmission source and/or require an interrupting device. Instead we believe that one or more transmission sources could feed the radial load to provide redundancy as long as there is adequate protection and isolation for improved customer-supply continuity and reliability. This should be considered radial as long as the loss of any transmission source does not affect, and is not necessary for, the operation of the interconnected transmission network. Further, it is imperative to understand that the NERC's revised definition will have a direct impact on entities across North America and will conflict with regulatory requirements, Codes, and Licenses. FERC in its Order 743 and 743A has directed NERC to address these concerns. We suggest the SDT and RoP teams should: • Carefully craft the exception criteria and procedure to be flexible and technically sound, to allow entities to adequately present their case to the ERO for inclusions or exclusions outside of the definition. • Include provisions in both the NERC exception criteria and exception process for federal, state and provincial jurisdictions. These provisions should provide clear guidance so that, if and when there are deviations from the exception criteria, they are properly identified with technical and regulatory justifications ensuring there is no adverse impact on the interconnected transmission network. This burden of proof should be left to the entity seeking exception because it may be difficult if not impossible to define the exception criteria. Further, if such an explicit criteria could be defined, it will in fact become another bright-line BES.

Yes
We agree with the concept of Inclusion I1. However, we suggest that since transformers are already covered by the definition, "all transmission Elements operated at 100 kV and above", and since Inclusions I2 to I5 are commonly related to generation only, Inclusion I1 should be removed and replaced by the following Exclusion: E(x) "Transformers not used as Generator Step-Up (GSU) transformers that have primary or secondary winding at less than 100 kV." We also suggest the SDT to put forward a high-level exception criteria with key menu items of assessment that can be followed continent-wide by entities to put forward their exception for element(s) mentioned in Inclusion I1, or any other inclusion(s). These inclusion(s) that are intended for exemption would be based on the entity's technical assessment, evidence and justification for its unique characteristics, configuration, and utilization.
No
We agree with the concept of Inclusion I2 with respect to individual generating units, but do not support having the entire path labeled as BES. In most cases, neither the path or a 20 MVA unit itself will have any impact on the reliability of the interconnected transmission network nor is it necessary for the operation. We also do not support the fact that there should be a blanket application of the BES definition to all individual generating units greater than 20 MVA. It is also important to mention that moving into the future, with the Green Energy and Smart Grid plans advocated by both Canadian and US policy makers, the gross nameplate rating of 20 MVA acquired from NERC registration restricts the penetration of dispersed generation in many parts of North America. We suggest the following: • Generation restriction (20 MVA or 75 MVA) should either be revised or the exception procedure should allow entities, with the support of technical evidence, to exclude element(s) from being labeled as part of the BES. • Entities should be able to use the exception process, with the help of technical evidence, to exclude generating units that do not impact the interconnected grid and the bulk transfer of power. • The path to generating facilities does not need to be BES contiguous. Generating units can be required to be planned, designed, and operated in accordance with a subset of NERC Standards, but should not require a contiguous path unless the unit is identified essential for the operation of transmission network. • Definition and/or exception process should provide clear acknowledgement and flexibility to avoid any regulatory conflicts. - For example: NERC and SDT should consider introducing a concept of a new category of registration or BES Support (BESS) elements. These elements are NOT BES but support the reliable operation of the interconnected transmission network. A sub-set of relevant NERC Standards should still apply to BESS elements such as planning, design, and maintenance. However, they may not be subject to mandatory compliance.
No
We agree with the concept of Inclusion I3 with respect to multiple generating units located at a single site, but do not support that the entire contiguous path has to be BES. The path of a 75 MVA plant or aggregated generation will rarely have any impact on the reliability of the interconnected transmission network nor is it necessary for its operation. We also do not support the fact that there should be a blanket application of this inclusion. As stated earlier, under various green energy, smart grid and dispersed renewable energy plans advocated by both Canadian and US policy makers, the gross nameplate rating of 75 MVA may undermine and deter the future potential of integrating Distributed Generations (DG's) that will be implemented to ensure the reliable operation of the interconnected transmission network BES, and, at the same time, providing the most effective and economical solutions for the rate payers in North America. Local generation can cost-effectively enhance the reliability of load pocket by avoiding transmission, but such restrictions would deter the adoption of good planning decisions. Upcoming load displacement projects would result in the installation of new self-generation facilities at customer sites, with the electricity generated being used on-site by the customer, with a resultant decrease in the consumption of electricity purchased via large scale generation. These projects can be large, and displace a substantial portion of the customer's (or local distribution company's) existing load, even to the extent of total self-sufficiency and the availability of surplus generation. The aggregated surplus generation capacity may very well exceed 75 MVA and would consequently force the facility owners to register as both Generation Owners (GO) and Transmission Owners (TO), which may be in conflict with regulatory rules in many jurisdictions. We suggest the following: • Generation restriction (75 MVA) should either be revised or the exception procedure should allow entities, with the support of technical evidence, to exclude element(s) being labeled as part of BES. • Path to generating facilities need not be BES contiguous. Generating units can be required to be planned, designed, and operated in accordance with a subset of NERC

Standards, but should not require contiguous paths. • Entities should be able to use the exception process, with the help of technical evidence, to exclude generating units that do not impact the interconnected grid and the bulk transfer of power. • From a regulatory perspective such an inclusion could also be in conflict with the current regulatory requirements in one or more Canadian jurisdictions. Definition and/or exception process should provide clear acknowledgement and flexibility to avoid any regulatory conflicts. For example, as stated earlier (Q4 response) NERC and SDT should consider introducing a concept of a new category of registration or BES Support elements. These elements are NOT necessarily BES but support the reliable operation of the interconnected transmission network.

No

We do not agree with Inclusion I4. Blackstart resources and transmission facilities on the cranking path should not be classified as BES regardless of size and voltage level. From a regulatory perspective, such an inclusion would be in conflict with the current regulatory requirements in many of the jurisdictions. More importantly, designating these facilities as BES Elements or Facilities beyond the 100 kV bright line, the 20 MVA/unit or 75 MVA/plant criteria, without a regard to their impact on the BES (under conditions other than system restoration) will impose unnecessary requirements for these facilities, which do not contribute to reliability under interconnected operation conditions. For restoration condition, this inclusion is extraneous given there is already a designation specific for system restoration covered by an existing standard to recognize their reliability impacts and to ensure their expected performance. NERC Standards EOP-005-2 stipulates the requirements for testing blackstart resource and cranking paths. This testing requirement suffices to ensure that the facilities critical to system restoration are functional when needed, which meets the intent of identifying their criticality to reliability. While we do not disagree with the SDT's interpretation of the FERC directives, the BES definition should cover those facilities that are needed for operation under both normal and emergency conditions, which includes situations related to black-start and system restoration. We do not agree that the directives specifically ask for inclusion of blackstart resources and facilities on the crank path in the BES definition. We believe the requirements in EOP-005-2 suffice to address the SDT's interpretation and concern regarding recognition of the reliability impacts and requirements for blackstart resources and facilities used for system restoration. Generating units of any size and transmission facilities of any voltage level may be used for blackstart and restoration. Conceivably, a generator of 10 MW and transmission facilities of 44 kV or 69 kV may be a part of the cranking path. A BES inclusion will then subject these generators and facilities, which are essentially "local" facilities but called upon to begin restoring its bulk interconnected counterpart, to comply with the reliability standards intended for maintaining BES reliability. Included in the BES definition will thus discourage smaller generators from providing blackstart capability, and the transmission facilities from being a part of the cranking path. This may also discourage Transmission Owners and Operators from identifying multiple blackstart resources and cranking paths to provide restoration flexibility. Such an inclusion will ultimately undermine reliability. If indeed any of these facilities are deemed necessary to support bulk power system reliability at times other than system restoration, they would/should have been identified through the basic BES definition and inclusion list or can be addressed through the exception procedure. We suggest and urge the SDT to drop I4 on the basis that: • The availability and performance expectations of blackstart resources and facilities on the cranking path are already specifically addressed in an existing standard; and • Unless they meet the BES definition and the other inclusion criteria, they do not have any perceived reliability impact on everyday operation of the BES.

No

We agree with the concept of Inclusion I5 but do not support that the entire contiguous path has to be BES. The path or aggregate generation will rarely have any impact on the reliability on the interconnected transmission network nor is it necessary for its operation. These are generally referred to as connection facilities. As stated earlier, with the Green Energy and Smart Grid plans and dispersed renewable energy advocated by both Canadian and US policy makers, the gross nameplate rating of 75 MVA may undermine and deter the future potential of integrating DG's that will be implemented to ensure the reliable operation of the interconnected transmission network BES, and, at the same time, provides the most effective and economical solutions for the rate payers in North America. Local generation can cost-effectively enhance the reliability of load pocket, by avoiding transmission, but such restrictions would deter the adoption of good planning decisions. (Refer to Q4 comments).

Yes
We agree with this concept as part of establishing a bright-line definition, as well as clarifying this exclusion as part of the revised BES definition. Although the concept is consistent with the statements in the FERC Order, it is imperative to understand that the limitations of E1 will have a direct impact on many entities (big and small) along with distribution companies across North America. The exclusion requirements are extremely restrictive with little or no technical basis and are limited to the fact that these parametric restrictions may not have any reliability impact in terms of location, configuration of element, and system characteristics. The radial characteristics and/or the reliability of the interconnected transmission network is determined by the amount of installed generation or a single transmission source or an interrupting device. For example, a redundant double circuit designed to supply the load with adequate protection and isolation beyond the radial tap could be significantly better for load supply-continuity and reliability. We suggest if more than one transmission source feed radial load to ensure customer supply continuity and reliability then this should be either part of the bright-line definition as long as there is adequate protection and, the loss of any single transmission source does not affect the interconnected transmission network. Accordingly, it will be an understatement to suggest that the SDT: • Carefully craft the exception criteria and procedure that is flexible and technically sound to adequately allow entities to present their case to the ERO for exclusion • Exception criteria should be at a high-level with key menu items of assessment that can be followed continent-wide by entities to put forward their exception for element(s) mentioned in exclusions or inclusions based on technical assessment, evidence and justification for its unique characteristics, configuration, and utilization • Acknowledge and provide provisions in both NERC exception criteria and exception process for federal, state and provincial jurisdictions.
Yes
We agree with most of the changes in Exclusion E2. However, we feel there is a need for evidence or technical study in regards to the limits described in I2 & I3. The real net aggregated power seen by the bulk power system at the interconnection, with the outlook of distributed generation systems, may be different than past experience. Hence it requires to be reassessed based on technical studies with respect to the future integration of DG's. (Please refer to comments in questions: 3 & 4). To establish a bright-line definition, E2 exclusion may be acceptable if the SDT provides adequate provisions within the exception procedure. See response to Q8 Accordingly, we suggest the SDT carefully craft the exception criteria that will allow entities to present their case to the ERO for exclusion from E2 requirements.
Yes
We agree with this concept as part of establishing a bright-line definition along with this clarifying exclusion in the revised BES definition. However, requirements in Exclusion E3 are restrictive and we do not agree to the limits on connected generation for Local Distribution Networks (LDN), described in part (b). The development and implementation of distributed generation will grow considerably in the future and will operate together with conventional sources of energy. The real net aggregated power of distributed generation seen by the bulk power system at the interconnection may be larger than past experience; hence it requires to be reassessed based on technical studies with respect to the future integration of DG's. (Please refer to comments in questions: 3 & 4) Also, we suggest combining exception E3 (c) and (d) as follows: "(c) Power is intended to flows only into the LDN: The generation within the LDN shall not exceed the electric Demand within the LDN; The LDN is intended to deliver power to load and not be used to transfer bulk power between different locations in the BES. It is recognized that under specified system conditions, bulk power transfers may take place between different points of the BES via the LDN. However, for these conditions BES reliability is not dependent on the existence of these power flows through the LDN." Finally, we suggest and urge the SDT to carefully craft the exception criteria & procedure that is flexible and technically sound to adequately allow entities to present their case, and/or unique characteristics of the elements under exception to the ERO for exclusion
No
Small utility or distribution provider is a relative term. A smaller distribution provider may have an impact on the transmission network while a large one may not; this is based on their design, configuration and protection. Hence, such an exception should apply regardless of the size of an entity. Having said that, the concept discussed here is to define a radial system and not a small utility, as mentioned in the FERC Order. We do not believe that the SDT had sufficient discussions while crafting the proposed exclusion in regards to small utilities. The language used in the proposed

clause is only appropriate to establish a bright-line definition for a radial system. It is worth noting that many small utilities (and individual load customers or generation connections) would have more than a single transmission source with a solid tap and, at the same time, be adequately protected and effectively isolated without any adverse impact on the transmission network. Such a practice and design is widely used across North America. Hence, we do not agree that this exclusion is an attempt to address the issue of small utilities. The definition and inclusions will force many small entities, load customers and generation unit owners to act and register as Transmission Owners. In some parts of the continent this would be in conflict with state or provincial regulatory act, Codes and Licenses. Consistent with the FERC Order, the ERO and the SDT should be aware of these conflicts and should not ignore them for later. Hence, we suggest the ERO and the SDT address this by providing explicit but simple provisions in the exception procedure by considering sound technical exception criteria that is flexible based on demonstration of evidence to justify the element's necessity for operation. Regulatory Acts and Rules will always trump NERC requirements and hence we suggest that the only evidence that should be required of small utilities/entities is: • Regulatory evidence • Evidence demonstrating that NO adverse reliability impact is afflicted on the interconnected BES because of their connection.

No

We commend the SDT for their concept in putting forward a 100kV BES bright-line definition. However, we do not believe that the current definition drafted by the SDT has differentiated between Transmission and Distribution or excluded distribution facilities from the BES, or addressed the issue of local distribution facilities above 100kV. It is important for the ERO and the SDT to understand and be consistent with the FERC Order for these important but complex issues. Otherwise, many parts of the continent could be in conflict with state or provincial regulatory act, Codes, and Licenses. We urge the ERO and SDT and RoP teams be aware of these conflicts and not disregard them, as they will pose many implementation complexities and confusion within the industry. Regulatory Acts and Rules will always trump NERC requirements and hence it is important that ERO should neither be caught in regulatory conflict nor put entities in these situations. It is worth noting that different jurisdictions may use different terminology for "distribution" or non transmission facilities or elements. For example, some jurisdictions label certain facilities as distribution which connect and are owned and operated by the distribution utility, customer or a generator customer while other label them as connection facility or elements. As stated earlier (Q10), we believe that the ERO and SDT can address this by providing explicit but simple provisions in the exception criteria (to be used by exception procedure) by putting forward a menu of key technical assessments , which are based on demonstration of evidence to justify the element's necessity for operation. For example, we suggest that for local distribution, the evidence that should be required is: • Regulatory evidence. • Evidence demonstrating that NO adverse reliability impact is afflicted on the interconnected BES because of their connection. Some of the other key attributes of such an exception criteria should be: • Elements are not to be part of interconnection between two balancing authority or contribute to IROLs • Entire system cannot be classified as contiguous • BESS Elements within exclusion can still be subject to relevant NERC Standards • Entity to justify whether or not the elements are necessary for the operation of the interconnected transmission network • Distinguish if the element in question supplies load centers, major cities, serves the national interest and/or possibly impact national commerce or national security, or is identified by the relevant regulatory authority. Accordingly, we suggest that the exception criteria should ONLY list a menu of items and a prescribed report template that should be assessed and presented by an entity as their evidence and justification for exception to a RE, the ERO and any relevant regulatory authority. This evidence and justification would be used by the ERO as part of its decision making process.

Yes

See earlier comments and suggestions. NERC's revised definition will have a direct impact on many entities across North America and could also be in conflict with regulatory requirements, Codes, and Licenses, which non FERC jurisdictional must comply. It would be impossible to identify each of these conflicts. For example: in one of the energy acts, NERC Standards can only apply to generation over 50 MVA which will cause one or more of the requirements to be in conflict and /or what constitutes distribution and what is not considered transmission (such as connection facility to a load or generation and owned by the proponent). However, we agree to establish a 100kV BES bright-line definition and we believe that the best venue to address avoiding compliance conflicts is through the exception criteria and the exception process. The benefits of such an approach are: • Establishment of

a continent wide bright line definition • Avoidance of regulatory conflicts and legal complexities • Assurance of the reliability of the interconnected transmission network
We believe that the concepts of inclusions and exclusions as part of the bright-line definition are excellent. However, these exclusions do not address several directives in Order No. 743 and 743A, such as: differentiation between Transmission and Distribution, non-jurisdictional concerns, or distribution. We believe that the BES definition itself is not a venue to address these concerns but suggest that these issues should be explicitly addressed by the ERO's exception criteria and exception process. Currently, the posted exception criterion is only a concept with many gaps and TBD, as posted details are later to follow. We suggest that the exception criteria should be a menu of technical items (load flows, stability analysis etc) and non technical items (type of loads such as distribution companies vs. major city center, national security etc). Entities should be required to assess and provide their own justification under each category with a conclusion that takes into account all of the relevant items for element(s) under exception, in a consistent template and table of contents. We suggest the SDT to avoid specification of any parameters as they would differ under different design concepts, system configurations, system characteristics and regulatory requirements.
Group
LG&E and KU Energy LLC
Brent Ingebrigtson
Yes LG&E and KU Energy have a concern that the approval and adoption of the BES definition project and BES exception procedure project are not linked. This would produce the possibility of the BES definition project completing and Registered Entities having to comply without having the appropriate and promised BES exception procedure in place to alleviate unreasonable compliance actions. More specifically, if the BES definition gets approved and BES exception procedure has not yet been approved (whether due to project delay or disapproval), then Registered Entities are required to ensure everything within the new definition is compliant, even if doing so is unreasonable or entirely unnecessary.
Individual
Mark Thompson
Alberta Electric System Operator
Yes
Yes
Yes
Consider adding the word “transformer” after “GSU”.
Yes
Consider adding the word “transformer” after “GSU”.
Yes
Yes

Yes
Yes
Yes
Yes
Yes
Comments: Alberta's legislation enables reliability standards, but prevents the AESO from developing rules related to reliability standards. The AESO therefore would like to see retention of the following clause from the NERC "Statement of Compliance Registry Criteria (revision 5) included in the list of inclusions as well as identifying the authority that determines what generators are material to reliability: III.c.4 Any generator, regardless of size, that is material to the reliability of the bulk power system. The wording should reflect that, for example, in the case of Alberta, that the AESO has the authority to make this determination.
Individual
RoLynda Shumpert
South Carolina Electric and Gas
Yes
Yes
Yes
Yes
Yes
Yes
Yes
No
We agree with the first part of E2, but we do not see the rationale for section (ii) and suggest it be deleted.
No
This seems to be covered by E1.
Yes
No
No
Individual
Reggie Wallace

Fayetteville Public Works Commission

No

The changes made by the SDT with respect to Real Power resources in Inclusion I2 do not ensure a consistent determination by independent entities of whether a generator should be included within the BES. The ambiguity in Inclusion I2 has implications on other Inclusions and Exclusions. See the comments on Question 3 for additional detail.

Yes

No

Inclusion I2 contains wording that is ambiguous and does not support a consistent determination by independent parties of whether or not a specific generator should be included in the BES. This definition will be a critical part of the guidance used by registered entities to validate their current registration status and by new entities to properly determine their initial registration status. It will also be used by regional reliability entities during compliance activities to verify proper registration. The ambiguous wording of Inclusion I2 could easily lead to re-interpretation issues between the owner/operator of the generator and regional entities in a compliance audit or other compliance setting. To be specific, the phrase "including the generator terminals through the GSU which has a high side voltage of 100 kV or above" is particularly troublesome. The phrase as written is intended to establish the boundary of the Real Power resource that will be included in the BES if the conditions of Inclusion I2 are met. The intent appears to be to include within the BES the generator, the cables connecting the generator terminals to the GSU, and the GSU, if the GSU has a high side voltage of 100 kV or above. If the GSU, however, does not have a high side voltage of 100 kV or above, then neither the generator, nor the connecting cables, nor the GSU would included within the BES. The crux of the problem lies in the interpretation of the term "GSU" and the phrase "through the GSU which". The term "GSU" or "generator step-up transformer" is commonly applied to a transformer with a generator directly connected to the low side and a bus directly connected to the high side. This is not, however, a defined term within the NERC Glossary and no standard for that interpretation is provided. The very structure of the phrase "through the GSU which" implies that there may be more than one GSU to be considered, some of which do not but at least one of which does have a high side voltage of 100 kV or above. This could be interpreted to include multiple transformers (GSUs) stepping up the generator voltage in series, the first stepping up the generator voltage to a bus, the second stepping up that bus voltge to another bus, and the third, and so on, and so on, until finally 'THE" transformer (GSU?) is encountered "WHICH" does have a high side voltage of 100 kV or higher. Thus, if the registering entity were to apply the commonly accepted definition of "GSU" to a generator, and the GSU directly connected to that generator has a high side of less than 100 kV, that entity would properly conclude that neither the generator nor the leads nor the GSU should be included in the BES. If a regional compliance entity applies the interpretation that transformers in series must be considered until a generator is encountered which does have a high side of 100 kV or higher, then that compliance entity would properly conclude that the generator, all the transformers in series, and the buses connecting those transformers should be included in the BES. Clearly this potential for contradictory conclusions would be better cleared up during this comment period than repeatedly coming up during compliance processes. I offer two suggestions for eliminating this ambiguity. The first and preferred method would be to change the wording of Inclusion I2 to read s follows: "Individual generating units greater than 20 MVA (gross nameplate rating) directly connected to the low side of a GSU which has a high side voltage of 100 kV or higher. The generator, the leads directly connecting the generator terminals to the GSU, and the GSU are all included in the BES." The second method would be to define within the NERC Glossary the term GSU as follows: "A generator step-up transformer (GSU) is a transformer directly connected to the terminals of a generator on the low side and to a bus at a higher voltage on the high side."

No

The same comment made in Question 3 and applicable to Inclusion I2 is also applicable to Inclusion I3.

Yes

No

Because no differentiation has been defined between "power producing resources" in Inclusion I5 and

"generating units" from Inclusions I2 and I3, this Inclusion has the potential to conflict with other Inclusions. It should be modified to read "Dispersed power producing resources with individual capacity of 20 MVA or less (gross nameplate rating) but with aggregate capacity greater than 75 MVA. . ."
No
Exclusion E1 references Inclusions I2 and I3. Therefore the comments provided in Question 3 with respect to Inclusion I2 are pertinent here as well. The radial system cannot be excluded if it includes any generation resources that are included in Inclusion I2. The ambiguity that exists in Inclusion I2 could, therefore, also have consequences in determining if a radial system can be excluded. If the recommended changes are made in Inclusion I2 then Exclusion E1 is acceptable as is.
Yes
Yes
Yes
Yes
No
None
Individual
Gary Kruempel
MidAmerican Energy Company
Yes
Yes
Yes
Yes
Yes
No
It is suggested that the inclusion be modified to include a more definitive description of the portion of the facility that would be considered to be in the BES. It is suggested that the phrase "from the point where the aggregated rating exceeds 75 MVA" be added after collector system in I5. The revised inclusion would then read as follows: Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a collector system from the point where the aggregated rating exceeds 75 MVA through a common point of interconnection to a system Element at a voltage of 100 kV or above.
No
The statement “originating with an automatic interruption device” seems to go beyond differentiating what is radial. If that were removed, the rest of the draft exclusion seems to capture what is radial.
Yes
Yes
Arbitrarily excluding small entities could affect reliability depinding on the specific transmission facilities the entity owns and/or operates.

No
We disagree that the SDT has appropriately excluded local distribution facilities through the revised bright-line core definition and specific inclusions and exclusions. A similar bright line criterion excluding facilities below 100 kV would be better. The intent is to clearly define facilities below 100kV (exclusive of resources added under criterion I4) as local distribution (excluded from FERC jurisdiction in accordance with the Federal Power Act). Critical facilities below 100 kV would be brought back in under the provisions of inclusion exception criteria of the Technical Principles for Demonstrating BES Exceptions procedure.
No
While there were no questions directed to the draft implementation plan in the comment form, if the intent was to also solicit comments on that plan, the schedule in that plan is likely too agressive if the result of the revised BES definition is that new facilites are brought into the BES and are thereby obligated to now comply with standards they had not previously been required to meet. Perhaps a provision should be added to the implementation plan to address this situation and allow an extended schedule for new BES facilities to comply with applicable standards.
Individual
Dennis Minton
Florida Keys Electric Cooperative
Yes
Yes
Yes
Yes
Yes
Yes
Yes
FKEC agrees with the comments of FMPA as shown below: FMPA agrees with the intent / concept, but has suggested wording changes to add clarity. The words “described as” should be deleted from the exclusion to avoid confusion. What matters is how the system is actually connected, not how someone describes it. In addition, “a single Transmission source” should be defined, and should be generic enough to encompass the various bus configurations. It is not the case, for example, that each individual breaker position in a ring bus is a separate Transmission source; in that case, a bus at one voltage level at one substation should be considered “a single transmission source.” Some examples of configurations that should be considered a single transmission source for this purpose are at https://www.frcc.com/Standards/StandardDocs/BES/BESAppendixA_V4_clean.pdf, Examples 1-6. The phrase “automatic interrupting device” should be replaced with the phrase “switching device.” Many radials are connected to ring buses or breaker-and-a-half schemes where the breakers (automatic interrupting devices) are within the bus arrangement where the appropriate division between BES and non-BES is at the disconnect switch as the radial “takes off” from the bus arrangement. As written, E1 would eliminate most radials from automatic exclusion and force most of them into the Exception Procedure. For instance, see examples 2 of the FRCC draft BES definition Appendix A at https://www.frcc.com/Standards/StandardDocs/BES/BESAppendixA_V4_clean.pdf). Switch "A" in example 2 is usually not automatic. Breaker D and E are automatic. Switch A is radial, Breakers D&E may not be. FMPA recommends replacing "automatic interrupting" with "switching" and allow manual switching devices to establish the boundary between BES and non-BES, otherwise we get into splitting up ring-buses or breaker-and-a-half schemes, or flooding the Exception Procedures with a lot of needless requests. Also, "device" is singular whereas the exclusion is for a "radial system". I presume that the SDT intends that if there are two lines originating at the same substation

supply a load in a redundant nature, that the "radial system" would be excluded (see examples 1, 3 and 4 of the FRC draft BES Definition Attachment A), which would mean there would be more than one device. Also, the phrase "A normally open switching device between radial systems may operate in a 'make-before-break' fashion to allow for reliable system reconfiguration to maintain continuity of electrical service." is misplaced in bullet a) and belongs in the non-bulleted section. FMPA recommends re-wording E1 to be: "Any radial system which is connected from a single Transmission source (such as a contiguous bus configuration like a ring bus or breaker-and-a-half scheme) originating with switching device(s) and meeting the criteria in bullets a, b or c below. A normally open switching device between radial systems may operate in a 'make-before-break' fashion to allow for reliable system reconfiguration to maintain continuity of electrical service. a) Only serving Load b) Only including generation resources not identified in Inclusions I2, I3, I4 and I5 c) A combination of (a) and (b)"
Yes
Yes
FKEC agrees with FMPA's comments shown below: FMPA agrees with the intent / concept, but has suggested wording changes to add clarity. The exclusion refers to groups of Elements that "distribute power to Load rather than transfer bulk power across the interconnected system." The use of the term "bulk power" is vague and could be read incorrectly as a reference to the "bulk-power system," which is defined in the Federal Power Act but is not a NERC defined term. If the LDN is connected to the BES at more than one location, there will by definition be some loop flow. We recommend below that Exclusion 3(d) be revised to quantify the amount of loop flow that is permissible in an excluded LDN. In the context of the first sentence of Exclusion E3, less specificity is needed, and the sentence should only be revised for the sake of accuracy to state: "Groups of Elements operated above 100 kV that are primarily intended to distribute power to load rather than to transfer power across the interconnected System." The exclusion's reference to connection "at more than one location" is vague. The sentence should be revised to read "connected to the Bulk Electric System (BES) from more than one Transmission source solely to improve the level of service to retail customer Load," and "Transmission source" should have the same meaning that it does in E1. E3(a) should require that there be switching devices between the LDN and the BES, not specifically automatic fault-interrupting devices. The term "separable by" in "Separable by automatic fault interrupting devices" is unclear and should be reworded. E3(b) To avoid pulling an LDN into the BES based on very small customer-owned generation (such as rooftop photovoltaics and hospital backup diesel generators) that the utility does not consider or rely on, or necessarily even know about, the item should be reworded: "Limits on connected generation: Neither the LDN, nor its underlying Elements (in aggregate), includes more than 75 MVA of generation used to meet the resource-adequacy requirements of electric utilities." E3(d) states "Not used to transfer bulk power." As noted above, "bulk power" is a vague term. There will necessarily be some loop flow on a system that is connected to the BES at more than one location. The amount of permissible loop flow for this purpose needs to be determined and stated in this item.
Yes
Yes
No
Individual
Thad Ness
American Electric Power
No
Rather than a 75 MVA threshold as designated in I3, we suggest a threshold of 100 MVA which we believe to be more appropriate. It is difficult to provide comments regarding the BES definition, given the parallel nature of the other related deliverables currently out for review. For example, there needs to be a defined relationship between an approved definition of BES, the technical principles for

demonstrating BES exception, and the exception process itself. When closely related projects such as these are done simultaneously, no individual deliverable can rely on the completed work of another. As a result, we risk having conflicting decision making across these projects.
Yes
No
The use of the word “including” within I2 seems to imply the inclusion of 20MVA (or greater) generating units beyond those which have a high side voltage of 100 kV or above. Was this intentional? If not, the following wording is preferable: "Individual generating units greater than 20 MVA (gross nameplate rating) having a GSU with a high side voltage of 100 kV or above. This includes equipment installed from the generator terminals through the high side of the GSU."
No
Please see response to question 3.
Yes
While AEP supports the concept of including designated Blackstart Cranking paths as part of the BES, there is concern that doing so without respect to voltage would unnecessarily include elements which should not be included as part of the BES. More clarity is needed to explicitly describe the scope of the inclusion. Is it limited to Transmission facilities or more broad to include Distribution facilities or even sub-Distribution auxiliary systems? If so, this would unnecessarily bring those sub-systems under the purview of PRC-005, for example.
Yes
Yes
AEP supports the concept of the exclusion of radial systems, however further clarification is needed regarding whether or not the source equipment is included as part of the radial system (for example, ring bus or breaker and a half bus configurations). In addition, “automatic interruption device” should be defined to alleviate any ambiguity.
Yes
Yes
Yes
AEP agrees with the proposed exclusion to the extent that such excluded small utilities would continue to provide any needed information the registered entities have requested from the excluded small utilities to ensure the reliability compliance of those registered entities.
Yes
No
AEP is not aware of any conflicts involving the proposed definition and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, or jurisdictional issue.
Usage of the NERC term “Element” clearly excludes associated auxiliary equipment such as protective relay systems and metering systems. If this is not the intent of the SDT, then there needs to be more comprehensive BES nomenclature established that distinguishes among the applicable primary-voltage equipment, the associated auxiliary equipment having an impact to the BES, and the associated ancillary equipment having no electrical impact to the BES. In addition, please see response to question 1 regarding the request for industry input on concurrent, closely related projects (approved definition of BES, the technical principles for demonstrating BES exception, and the exception process itself).
Individual
Rick Drury
East Kentucky Power Cooperative, Inc.
Yes

Yes
Yes
Yes
Yes
Yes
Yes
EKPC has a concern with the wording of the definition for Exclusions: E1 - Any radial system which is described as connected from a single Transmission source originating with an automatic interruption device and: a) Only serving Load. A normally open switching device between radial systems may operate in a 'make-before-break' fashion to allow for reliable system reconfiguration to maintain continuity of electrical service." This wording leads EKPC to believe that a radial 138 kv line that steps down into a 69 kv looped system that have no facilities included in the BES would not be excluded as radial. This line cannot have any more impact on the BES than the 69 kv system it connects to that is excluded from the BES. Therefore I would add to exclusion E1a, "or only connecting to a transformer stepping down to a voltage below 100kv".
Yes
Yes
Yes
Yes
Yes
Individual
Andrew Z. Pusztai
American Transmission Company, LLC
Yes
However, to clarify the core definition, ATC proposes to change the text for Real and Reactive Power resources from "connected" to "operated or connected".
Yes
Yes
No
ATC offers the following alternative language: • The wording "connected through a common bus" is drawn from the NERC Compliance Registry Criteria. ATC agrees with the language if the intent is to let entities classify the applicable multiple generating units as part of the BES only when it is connected to one (common) bus. However, if the intent is for entities to also classify multiple generation as part of the BES when it is connected through two or more GSUs to different bus sections of a set of (common) buses that are interconnected through bus-tie breakers [which may be done to provide improved reliability and maintenance flexibility], then wording like "connected through a common bus or set of interconnected buses" would be more appropriate. • It is also ATC's understanding that

entities do not have to classify applicable multiple generating units as part of the BES when the aggregate MVA is connected to different buses at different voltage levels and no more than 75 MVA is connected to any one bus (or set of interconnected buses) at a single voltage level of 100 kV or more. Is this a correct interpretation?
Yes
For clarification, ATC understands that only blackstart resources that are part of a Transmission Operator's Blackstart Restoration plan are included in I4 (Ref. EOP-005) and should be consistent with the upcoming CIP-002 version 4 standard. ATC also recommends that the SDT consider adding Blackstart Resources as a defined term in the NERC Glossary.
Yes
ATC poses the following questions to the SDT for consideration: Which components of the dispersed power resources would be classified as BES? Are the small wind generator units and terminals through the GSUs to a higher voltage (e.g. 34.5 kV) collector bus classified as BES Elements? Are the higher voltage bus, the associated elements (e.g. protection system, cap bank, SVC, etc.), and step up transformer to a system Element of 100 kV or above to be classified as BES Elements?
Yes
ATC offers the following alternative language: ATC suggests replacing the wording of "connected from a single Transmission source" with "connected to the Bulk Electric System". Furthermore, ATC believes that Exclusion E1 is appropriate and should be part of the definition of the BES. However, ATC believes that a registered entity should be given the option to not be required to follow the exclusions in the E1 criteria. Some registered entities for operational and business purposes may wish to continue to classify their radial system assets, which are operated above 100 kV, as BES components.
Yes
Yes
No
ATC believes that small utilities have interfacing responsibilities, and should not be exempt if they own elements (e.g. CTs, batteries, etc.) that are part of a protection scheme that protects the BES Elements.
Yes
ATC agrees that the revised bright-line core definition and associated inclusion and exclusion criteria excludes distribution, however, recognizes that there are protection elements that may be owned by distribution which may trip a BES Element. (Covered by NERC Standard PRC-005)
No
Group
Alabama Public Service Commission
John Free
No

In drafting the inclusions and exclusions that accompany the core BES definition, the SDT needs to be very careful in considering jurisdictional issues. FERC has recognized in its recent orders regarding the BES definition that local distribution facilities are not subject to its jurisdiction under Section 215 of the Federal Power Act. As the SDT considers the scope of the inclusions and exclusions from the BES Definition, it needs to consider whether the proposed provisions only include: 1) facilities or control systems that are “necessary” for operating an interconnected electric transmission network and 2) whether they involve generation facilities that are “needed” to maintain transmission system reliability. If the proposed inclusions and exclusions result in the BES definition applying to facilities beyond this “necessary” and “needed” scope (such as local distribution facilities), then the definition would be inconsistent with Section 215 and could improperly make those facilities subject to “reliability standards” contrary to the Federal Power Act. The APSC generally supports the BES Core Definition and all three Exclusions proposed by the SDT. The APSC strongly supports Exclusion E3 for local distribution networks and Exclusion E1 for radial systems (subject to the concerns below). Exclusion E3 will ensure State jurisdiction over facilities that are used in the local distribution of electric energy. The APSC does not support Inclusion I2 for individual generating units greater than 20 MVA. Inclusion I2 should be eliminated entirely because it will result in too many radial sub-transmission load serving facilities losing their non-BES status, when those facilities are not “necessary” for bulk power system reliability. The APSC supports Inclusion I3 (75MVA) as a sufficient generating unit threshold for purposes of this definition. If Inclusion I2 is eliminated, then the reference to Inclusion I2 within Exclusion E1 should also be eliminated.
Yes
See comments in response to Question 11 above.
The Alabama Public Service Commission (APSC) appreciates the fact that a member of the Oregon PUC Staff is participating on this BES Definition drafting team. In reviewing the proposed definition, the APSC’s focus is to ensure that appropriate definitional lines are drawn so that recognized jurisdictional boundaries are acknowledged and respected. The concern underlying this focus of the APSC is the fact that utilities must make significant investments to comply with mandatory reliability standards and, accordingly, compliance with such standards must be necessary and not duplicative. Furthermore, there should be a commensurate reliability benefit associated with the cost of the investments needed for compliance. The proposed definition and NERC’s development of standards should focus on reliable operation of the interconnected electric transmission network (BES) in order to prevent local events from affecting other regions, not to ensure reliable operation at the local level.
Individual
Linda Jacobson
Farmington Electric Utility System
Yes
Yes
Yes
Yes
No
The drafting team should consider adopting language similar to CIP-002-4 for Cranking Paths. Cranking Paths up to the the point on the Cranking Path where two or more path options exist.
Yes
Yes
Yes
Yes

Yes
Yes
No
The Rules of Procedure for Exceptions should define the compliance expectation of the entity while an exception is being considered; similar to the CIP TFE process.
Individual
Rich Salgo
Sierra Pacific Power Co d/b/a NV Energy
Yes
The revised core definition serves to address the directives of the Commission Order in 743 and 743A, particularly the elimination of regional discretion, and it also eliminates the ambiguity of the word “generally”.
No
We agree with the concept; however there are two issues that must be resolved. First, the “two windings” language should be changed to “two terminals”, as in the case of an auto-transformer, there is technically only one winding, and it would fail to be included in this inclusion designation as written. Second, a literal read could have an unintended interpretation that transformers with fewer than 2 windings at 100kV might still be included through the core definition. The SDT should consider whether this I1 inclusion item would be better applied in the converse as an exclusion designation.
Yes
While 20MVA has no technical basis for the threshold above which a generator should be considered to be necessary for the reliable operation of an interconnected transmission network, the industry has not provided any technical data to support a value other than this which has been established in the NERC Statement of Compliance Registry Criteria.
Yes
While 75MVA has no technical basis for the threshold above which an aggregate generation plant should be considered to be necessary for the reliable operation of an interconnected transmission network, the industry has not provided any technical data to support a value other than this which has been established in the NERC Statement of Compliance Registry Criteria.
Yes
Yes
Similar to the response to Q4, the 75MVA has no technical basis as being a threshold for determining necessity in the reliable operation of the interconnected transmission system; however, no technical data supports an alternate value.
Yes
Agree with this exception and emphasize that the make-before-break language is essential to be retained in this exclusion.
Yes
Yes
NV Energy strongly supports the definitional exclusion of LDN’s from the BES, and such exclusion is necessary to ensure that the BES definition meets the statutory requirement to exclude all facilities used in the local distribution of electric power. In the characteristics of the LDN, item (d) should be clarified to eliminate the ambiguity that arises from the term “used”. We suggest the following revision: Not intentionally used to transfer bulk power: The LDN is not used to provide a transaction scheduling path for, nor intentionally used to accommodate the transfer of, energy originating outside the LDN for delivery through the LDN;

Yes
Yes
Through the radial exclusion and the LDN exclusion (E1 and E3), the definition has made a delineation between distribution and bulk transmission. In this exclusion language, the definition as proposed addresses the quantifiable parameters from the FERC 7-factor transmission test.
No
Group
Western Electricity Coordinating Council
Michelle MIzumori
Yes
Yes
WECC agrees in concept and understands that the intent of the phrase “other than GSU transformers” was used to prevent duplication or conflict with I2. However, it has the unintended consequence of creating the appearance that GSU transformers are not included in the definition, which is more of a conflict. By removing this phrase, such transformers would be clearly included because, if both terminals are connected at greater than 100 kV, it will also be true that the high side is connected at greater than 100 kV, per I2. WECC suggests removing this phrase. Also, the final statement more appropriately should be “…unless excluded under Exclusions E1 or E3.” Finally, the term “two windings” may be technically incorrect because some transformers may only have one winding. This wording would exclude single-winding transformers at or above 100 kV. One option may be to change the language to “two terminals” instead of “two windings.” It may also be useful to clarify that transformers with one terminal above and one terminal below 100 kV should be excluded.
Yes
WECC agrees in concept, but the language could be clarified on the GSU transformer. Suggested language “Individual generating units greater than 20 MVA (gross nameplate rating) including the generator terminals up to and including the GSU transformer, which has a high-side voltage of 100 kV or above.”
Yes
WECC agrees in concept, but suggests that the phrase “connected through a common bus” may be unclear. For example, if there is also load connected through that common bus, does that net, does it negate the inclusion, or does it not matter? Perhaps a phrase such as “regardless of the amount of load also connected through that common bus” would help. The GSU comment from I2 also applies. Suggested language “…including the generator terminals up to and including the GSU transformer, which has a high-side voltage of 100 kV or above.”
Yes
Yes
WECC agrees in concept, but it is unclear why there is the new term “power producing resources.” Is this meant to include both Real Power Resources and Reactive Power Resources (terms used in the base definition)? This should be clarified. In addition, it appears from comments of the drafting team that the intent of this inclusion was primarily for wind and solar farms, but the language would also pull in traditional generation that happens to be connected at a single point. The language should be clarified so that it only captures the intended generation.
Yes
WECC generally agrees in concept. However, it is unclear what is required to demonstrate the “make-before-break” connection. Is this intended to mean that the normally-open switch is mechanically or electrically interlocked to ensure the “make-before-break” requirement is met? It would be a normal switching practice to close the normally-open switch to make the parallel before opening the normally-closed switch, but is the normal switching practice sufficient to make this claim? Also, it is

unclear whether the automatic interruption device itself is a part of the BES.
Yes
WECC agrees in concept, but it is unclear what happens if/when the “binding obligation” ends, as well as what constitutes a “binding obligation.” E2(ii) should be clarified as to what constitutes “standby, back-up, and maintenance power services provided…pursuant to a binding obligation.” This may cause administrative burden to monitor such binding commitments.
Yes
WECC agrees in concept. However, in sub-bullet b), it should be clarified that the 75 MVA is gross-aggregate nameplate, as described in the inclusions. In sub-bullet c), it should be clarified whether this requirement is at any time or is for hourly integrated values. Also, the use of the term “major transfer paths” should be modified to be “major transfer paths in the Table titled Major WECC Transfer Paths in the Bulk Electric System.” Finally, the reference to “above 100 kV” should be “at or above 100 kV” for consistency.
No
As written, it is unclear how this exclusion differs from the Radial exclusion. The term “single Transmission source” needs to be clarified – it could be read to be a single line or a single entity, which would change the meaning of this exclusion. It is also improper to include registration criteria in a definition. Furthermore, “small utility” needs to be defined more clearly. The last sentence appears circular because ownership of a transmission element would draw the owner into registration.
Yes
No
The definition should also reference the exception process and technical justification allowed for further inclusion or exclusion from the BES.
Group
Western Montana Electric Generating and Transmission Cooperative
William Drummond
No
As a general matter, Western Montana Electric Generating and Transmission Cooperative (WMG&T) supports the approach the Standards Development Team (“SDT”) has taken to defining the Bulk Electric System (“BES”). The changes made in the revised core definition are helpful and represent significant progress toward an acceptable definition. With an effective and efficient exclusion process, the draft will better define the BES as a whole. We urge the SDT to bear in mind the restrictions contained in Section 215 of the Federal Power Act (“FPA”) The “bulk-power system” (As per FERC, we treat the statutory term “bulk-power system” as equivalent to the term ordinarily used in the industry, “Bulk Electric System”) definition imposes a clear limit on the reach of the mandatory reliability regime. The BES is made up of only those “facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)” and “electric energy from generation facilities needed to maintain transmission system reliability.” Congress reinforced that limit in Section 215(i), where it emphasized that the FPA authorizes the imposition of reliability standards “for only the bulk-power system.” WMG&T is concerned that the SDT’s proposed definition is overly-broad, and that it will sweep in many Elements that have little or no material impact on the reliable operation of the interconnected bulk transmission grid. For example, the definition uses the arbitrary 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators. Accordingly, for the BES definition to conform to the requirements of the statute, the SDT must adopt an effective mechanism to exempt facilities like these that are improperly swept in by the SDT’s brightline approach to inclusions and exclusions. For this reason, the Exception process to accompany the SDT’s definition is of critical concern. If the SDT incorporates this statutory language as its core definition, it will have addressed FERC’s primary concern with a minimum of disruption to the current NERC system of definitions. The definition could then be further elaborated to show specific points of demarcation for each inclusion and exclusion similar to that Proposal 6 from the WECC Bulk Electric System Definition Task Force (“BESDTF”) team to further delineate BES and non-BES facilities.

No
In concept, we support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. In this regard, we note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams noting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort. Also, the reference to "two windings of 100 kV or higher" may create some confusion because many three-phase transformer banks have 6 or 9 windings, depending on whether the transformer has a tertiary. We suggest clarifying this provision by changing the clause reference two windings to read: "the two highest voltage transformer windings of 100 kV per phase that are connected to the Bulk Electric System." We again urge the SDT to consider further delineation of points of demarcation similar to WECC BESDTF Proposal 6.
No
WMG&T is concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Unfortunately, the SDT appears to have concluded that any interconnection facility operating above 100-kV should be classified as BES. The result will be to require Generation Owners to register as Transmission Owners/Operators, as well, producing substantial additional compliance costs for those Generation Owners but resulting in little or no improvement in the reliability of the BES. We recommend that the SDT, like the Project 2010-07 SDT (commonly referred to as the GO/TO Team), give careful consideration to the practical results of its recommendations rather than relying on abstract conclusions about whether a "contiguous" or "non-contiguous" BES is more desirable. We are concerned that the SDT's pursuit of a "contiguous" BES will result in a substantially over-inclusive BES definition. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. NERC's Standards Drafting Team for Project 2010-07, has already considered this question and, based on an in-depth review of potentially applicable reliability standards, has concluded that generation interconnection facilities, even if operated above 100-kV, need to comply only with a limited set of reliability standards in order to achieve the reliability goals. Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability.
No
WMG&T is concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission

system reliability" and are therefore properly included in the BES definition.
Yes
Including "all" blackstart and blackstart cranking paths in the BES may ultimately provide an incentive to the electric industry to reduce the number of resources with blackstart capability. We therefore suggest that essential blackstart resources identified by the Regional Entity should be included in the Bulk Electric System, but non-essential blackstart resources need not be.
No
WMG&T agrees that it is important to address wind generation facilities and similar generation facilities in which a large number of generating units, each with a relatively small capacity, are clustered and fed into the grid at a single interconnection point. That being said, WMG&T is concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained. We believe the exclusion as drafted adequately defines radials.
No
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold (through reference to Inclusion I2) lacks an adequate technical justification in this context. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit ("standby, back-up, and maintenance power…") should be eliminated.
Yes
WMG&T strongly supports the categorical exclusion of Local Distribution Networks from the BES. In fact, for reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are, of course, probably the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. WMG&T supports the LDN exclusion, but we believe the exclusion should be refined in the following respects: • The SDT's draft states that: "LDN's are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load." We recommend that the SDT revise the sentence quoted above as follows: "LDN's are connected to the Bulk Electric System (BES) at more than one location to improve the level of service to retail customer Load and not to accommodate bulk transfers of power across the interconnected bulk system." By instituting this suggestion, the SDT would emphasize the key difference between an LDN, which is designed to reliably serve local, end-use retail customers, and the BES, which is designed to accommodate bulk transfer of power at wholesale over long distances.
Yes
WMG&T supports the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that can ill afford the substantial costs that accompany imposition of mandatory compliance with reliability standards. Further, we agree that the small utilities covered by the exemption will have no measurable impact on the operation of the interconnected BES. In the Pacific Northwest, many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.
No
While WMG&T agrees that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing most local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed at greater length in our answer to Question 1, WMG&T believes that the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES. As discussed in our

answer to Question 3, WMG&T notes that exclusion of facilities from the BES does not mean that owners of those facilities are entirely exempt from reliability standards. On the contrary, the statute provides that “users” of the BES can be subject to reliability regulation. Hence, even where an entity does not own BES assets, it could be required to, for example, provide necessary information to the applicable Reliability Coordinator and to participate in the regional Under-Frequency Load Shedding program by setting the UFLS relays in its Local Distribution Network at the appropriate settings. We note that participants in the WECC BESDTF Task Force generally agreed that appropriate information should be provided by non-BES entities, although there was considerable concern related to ensuring that the provision of information was not unduly burdensome.
Yes
The Exceptions process is a necessary part of making this proposal complaint with the Federal Power Act. As noted in our responses to Question 1 and Question 11, we believe the basic SDT proposal is potentially in conflict with the limitations of the Federal Power Act, and in particular the statutory exclusion for facilities used in the local distribution of electric energy. The SDT’s approach can meet the statutory requirements only if the Exception process currently under development results in facilities that are not properly classified as BES being exempted from regulation as BES facilities.
WMG&T has these additional concerns: • The current definition provides that “Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process.” WMG&T is concerned that the SDT carefully delineate which entity has the burden of proof in the exclusion process. The WECC BESDTF approach, which we commend to the SDT, laid out these burdens in some detail. Under that approach, essentially, if a facility is excluded from the BES by virtue of the specific exclusions listed in the definition, the Regional Entity bears the burden of proving that the facility nonetheless has a material impact on the interconnected bulk transmission system and therefore should be included in the BES. On the other hand, if a facility is classified as BES by virtue of the list of inclusions set forth in the BES definition, it can still escape classification as BES, but bears the burden of demonstrating that its facility has no material impact on the interconnected transmission system. We urge the SDT to give careful consideration to these burden-of-proof questions and to follow the lead of the WECC BES Task Force. • For the reasons we have explained in our answer to Question 11, we believe the Exception process is critical both to ensure that the BES definition is effective in producing measurable gains to bulk system reliability and to ensuring that the definition will comply with the limitations Congress placed in Section 215. Hence, we believe the entire BES definition, including the Exception process and related procedures, should be vetted through the NERC Standards Development Process, including the full comment periods and a ballot approvals provided for in that process. We are concerned that important elements of the BES definition have been assigned to the Rules of Procedure Team, and that changes in the Rules of Procedure are subject to approval in a process that provides considerably less due process and industry input than the Standards Development Process. Accordingly, we urge that all elements of the BES definition, including those elements that have been assigned to the Rules of Procedure Team, be vetted through the Standards Development Process.
Group
ReliabilityFirst
Jim Uhrin
No
We feel the intent of the FERC Order was to simplify and not complicate the definition and the inclusion/exclusion process. This definition is now even more complex. we also feel that as a result of several defined terms such as the LDN teh proposed definition will in most cases exclude portions of networks in locations such as Washington DC, New York and other Metro Areas, many Munis and citiies that are currently registered. If the intent is to remove entities from the registry this will in most likely do it.
Yes
Yes
Yes

Yes
but needs to state if this is ALL paths or just a single path, there may be many.
Yes
but the term "Dispersed Power Producing Resuorces" needs to be defined.
Yes
teh term "Single Transmission Source" needs defined, and as well what elemnents are defined by "automatic interrupting devices" there is debate out in the industry.
Yes
as long as the resources when removed from service have a load component that accompanies it, otherwise there could be an impact to the BES.
No
the LDN term must be a NERC defined term and if this is allowed as mentioned in the first comment, we feel the intent of the FERC Order was to simplify and not complicate the definition and the inclusion/exclusion process. This definition is now even more complex. we also feel that as a result of several defined terms such as the LDN teh proposed definition will in most cases exclude portions of networks in locations such as Washington DC, New York and other Metro Areas, many Munis and citiies that are currently registered. If the intent is to remove entities from the registry this will in most likely do it.
No
it needs to be clear that "all" items must be met to be excluded in E4, E4b seems to conflict with I2 that states it needs included, E4a should state a single source unless LDNs are allowed mutilple sources and then could be considered networked, E4c needs to define who make a the determination on flow and under all system configurations
No
we feel that BES elements have been included in teh exclusions
No
Individual
Jennifer Eckels
Colorado Springs Utilities
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
No
Colorado Springs Utilities generally supports Exclusion E3 that provides for the exclusion of Local Distribution Networks (LDNs) from the BES, with the following modifications: 1) It is not necessary to

articulate the nature of the LDN's connection to the BES. If the characterizations are met, the number of connections and the reasons for the connections are immaterial. 2) If the LDN is a normal net import, there is no need to limit the amount of connected generation since the generation will have no material effect on the BES. 3) 'Bulk power transfers' are acceptable across an LDN if the transfer is to a nested LDN. Contractual energy, originating outside the LDN and delivered to a nested LDN, for example, is still load delivery and has the same physical characteristics of a holistic LDN and the transfer of bulk power is immaterial. We propose changing Exclusion E3 to read, "Local Distribution Networks (LDN): Groups of Elements operated above 100 kV that distribute power to Load rather than transfer bulk power across the Interconnected System. The LDN is characterized by all of the following: a) Separable by automatic fault interrupting devices: Wherever connected to the BES, the LDN must be connected through automatic fault-interrupting devices; b) Power flows only into the Local Distribution Network: The generation within the LDN shall not exceed the electric Demand within the LDN; c) Not used to transfer bulk power, except transfers to nested LDNs: The LDN is not used to transfer energy originating outside the LDN for delivery through the LDN, except transfers to nested LDNs; and d) Not part of a Flowgate or Transfer Path: The LDN does not contain a monitored Facility of a permanent flowgate in the Eastern Interconnection, a major transfer path within the Western Interconnection as defined by the Regional Entity, or a comparable monitored Facility in the Quebec Interconnection, and is not a monitored Facility included in an Interconnection Reliability Operating Limit (IROL)."
Yes
Yes
Please refer to comments on question 9 - Exclusion 3
No
Colorado Springs Utilities supports the SDT's efforts to create an acceptable BES definition directly linked to an exemption process. Know that WECC has a task force, the Bulk Electric System Definition Task Force (BESDTF), which has done some notable work on this task. See WECC BESDTF Proposal 6, Appendix C (http://www.wecc.biz/Standards/Development/BES/default.aspx). The BES definition is very complex and the BESDTF has already addressed many of the tough issues that have yet to be addressed in this process, such as: • Local Distribution Network definition for automatic exemption • Determination of radial facilities • Demarcation of BES and non-BES Elements • Alternate dispute resolution process • Assignment of the burden of proof for the exemption process • Technical approach for the inclusion/exclusion determination
Group
Cogeneration Association of California and Energy Producers & Users Coalition
Don Brookhyser
Yes
To respond to WECC's concern, please consider that facilities procure standby service because it is needed for the facility's operation, not to escape registration or compliance. This is a long-term commitment, and the sufficiency of the service will be monitored by the state regulatory authority. "Standby service" is a term well-understood in the industry and generally not further defined in any utility tariff.

Group
Florida Municipal Power Agency
Frank Gaffney
Yes
FMPA appreciates the opportunity to comment on the draft BES definition. We generally support the direction taken by the SDT, with some minor changes. FMPA suggests a few clarifying edits to the core definition. First, the definition should refer to “non-generator Reactive Power resources,” to make clear that although all generators provide some reactive power, those that do not meet the criteria of I2-I5 are not included in the BES. There is ambiguity concerning whether a transformer stepping down from >100 kV to <100 kV is included, though FMPA believes that the SDT intends to exclude such transformers. It is clear that transformers with two windings >100 kV are included and GSUs for registered generators are included, but it is somewhat unclear in the current draft whether a 138 kV to 69 kV transformer is included or excluded, for instance. FMPA suggests making it clear that the intent of the SDT is to include (a) GSUs associated with BES generators and (b) transformers with 2 or more windings >100 kV, and that other transformers are excluded. We also believe the drafting team intended to exclude all elements that are not included either under the BES definition and designations or through the exception process. For the sake of clarity, we suggest that a sentence to that effect be added to the core definition. Finally, we note that the definition does not currently refer to the existence of the exception process. We suggest that such a reference be added either to the core definition (as in the revised text suggested by FMPA in this response) or to the lists of Inclusions and Exclusions. The following is the core definition incorporating the changes suggested by FMPA: All Transmission Elements (except transformers) operated at 100 kV or higher, transformers as described below, Real Power resources as described below, and non-generator Reactive Power resources connected at 100 kV or higher unless such designation is modified by the list shown below. The NERC Rules of Procedure [citation] provide an Exception Process through which Elements not included in the BES under this definition and designations may be included in the BES, and Elements included in the BES under this definition and designations may be excluded from the BES. Elements not included in the BES either by application of this definition and designations, or through the BES exception process, are not BES Elements.
Yes
FMPA supports Inclusion I1 but proposes clarifying edits. To minimize possible confusion as to the category of transformers being addressed in I1, and the sufficiency of a single applicable Exclusion, FMPA suggests the following rewording: “Transformers, including phase angle regulators, and not including generator step-up (GSU) transformers, with two windings of 100 kV or higher unless excluded under Exclusion E1 or E3.”
Yes
FMPA understands that the intent is to define the BES component of qualifying generators as that equipment from the generator terminals through the GSU. To convey clearly this point, as well as that only generators that are both over 20 MVA and connected through a GSU with a high side voltage of at least 100 kV are included in the BES, I2 should be reworded as follows: “Individual generating units greater than 20 MVA (gross nameplate rating), connected through a GSU with a high-side voltage of 100 kV or above. A BES generator includes the equipment from the generator terminals through the GSU.”
Yes
I3 contains language similar to I2, and should be similarly reworded, as follows: “Multiple generating units located at a single site with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating), connected through a common bus operated at a voltage of 100 kV or above. A BES generating plant includes the equipment from the generator terminals through the respective GSUs.”
Yes
Yes
FMPA agrees with the concept of Inclusion I5 but suggests a language change to clarify what we

understand to be the drafting team's intent, that the inclusion is intended to apply to dispersed wind and solar generating plants, and not, for example, to a radially-connected city with an aggregate of 75 MW of small generators behind-the-meter. This distinction is appropriate because such a city cannot have the same impact on the grid as a 75 MW wind farm; loss of the radial connecting the city to the grid would result in loss of its load as well as its generation, so that the supply-demand mismatch would be far less significant. FMPA thus suggests that I5 be revised to read: I5 Wind farm or solar power installation with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a collector system through a common point of interconnection to a system Element at a voltage of 100 kV or above.

Yes

FMPA agrees with the intent / concept, but has suggested wording changes to add clarity. The words "described as" should be deleted from the exclusion to avoid confusion. What matters is how the system is actually connected, not how someone describes it. In addition, "a single Transmission source" should be defined, and should be generic enough to encompass the various bus configurations. It is not the case, for example, that each individual breaker position in a ring bus is a separate Transmission source; in that case, a bus at one voltage level at one substation should be considered "a single transmission source." Some examples of configurations that should be considered a single transmission source for this purpose are at https://www.frcc.com/Standards/StandardDocs/BES/BESAppendixA_V4_clean.pdf, Examples 1-6. The phrase "automatic interrupting device" should be replaced with the phrase "switching device." Many radials are connected to ring buses or breaker-and-a-half schemes where the breakers (automatic interrupting devices) are within the bus arrangement where the appropriate division between BES and non-BES is at the disconnect switch as the radial "takes off" from the bus arrangement. As written, E1 would eliminate most radials from automatic exclusion and force most of them into the Exception Procedure. For instance, see examples 2 of the FRCC draft BES definition Appendix A at https://www.frcc.com/Standards/StandardDocs/BES/BESAppendixA_V4_clean.pdf). Switch "A" in example 2 is usually not automatic. Breaker D and E are automatic. Switch A is radial, Breakers D&E may not be. FMPA recommends replacing "automatic interrupting" with "switching" and allow manual switching devices to establish the boundary between BES and non-BES, otherwise we get into splitting up ring-buses or breaker-and-a-half schemes, or flooding the Exception Procedures with a lot of needless requests. Also, "device" is singular whereas the exclusion is for a "radial system". I presume that the SDT intends that if there are two lines originating at the same substation supply a load in a redundant nature, that the "radial system" would be excluded (see examples 1, 3 and 4 of the FRC draft BES Definition Attachment A), which would mean there would be more than one device. Also, the phrase "A normally open switching device between radial systems may operate in a 'make-before-break' fashion to allow for reliable system reconfiguration to maintain continuity of electrical service." is misplaced in bullet a) and belongs in the non-bulleted section. FMPA recommends re-wording E1 to be: "Any radial system which is connected from a single Transmission source (such as a contiguous bus configuration like a ring bus or breaker-and-a-half scheme) originating with switching device(s) and meeting the criteria in bullets a, b or c below. A normally open switching device between radial systems may operate in a 'make-before-break' fashion to allow for reliable system reconfiguration to maintain continuity of electrical service. a) Only serving Load b) Only including generation resources not identified in Inclusions I2, I3, I4 and I5 c) A combination of (a) and (b)"

Yes

We understand that E2 is intended to apply only to retail customers' generation. The exclusion should therefore be revised to make that limitation clear. Specifically, the first sentence should read: "A generating unit or multiple generating units that serve all or part of retail customer Load with electric energy on the retail customer's side of the retail meter.

Yes

FMPA agrees with the intent / concept, but has suggested wording changes to add clarity. The exclusion refers to groups of Elements that "distribute power to Load rather than transfer bulk power across the interconnected system." The use of the term "bulk power" is vague and could be read incorrectly as a reference to the "bulk-power system," which is defined in the Federal Power Act but is not a NERC defined term. If the LDN is connected to the BES at more than one location, there will by definition be some loop flow. We recommend below that Exclusion 3(d) be revised to quantify the amount of loop flow that is permissible in an excluded LDN. In the context of the first sentence of

Exclusion E3, less specificity is needed, and the sentence should only be revised for the sake of accuracy to state: “Groups of Elements operated above 100 kV that are primarily intended to distribute power to load rather than to transfer power across the interconnected System.” The exclusion’s reference to connection “at more than one location” is vague. The sentence should be revised to read “connected to the Bulk Electric System (BES) from more than one Transmission source solely to improve the level of service to retail customer Load,” and “Transmission source” should have the same meaning that it does in E1. E3(a) should require that there be switching devices between the LDN and the BES, not specifically automatic fault-interrupting devices. The term “separable by” in “Separable by automatic fault interrupting devices” is unclear and should be reworded. E3(b) To avoid pulling an LDN into the BES based on very small customer-owned generation (such as rooftop photovoltaics and hospital backup diesel generators) that the utility does not consider or rely on, or necessarily even know about, the item should be reworded: “Limits on connected generation: Neither the LDN, nor its underlying Elements (in aggregate), includes more than 75 MVA of generation used to meet the resource-adequacy requirements of electric utilities.” E3(d) states “Not used to transfer bulk power.” As noted above, “bulk power” is a vague term. There will necessarily be some loop flow on a system that is connected to the BES at more than one location. The amount of permissible loop flow for this purpose needs to be determined and stated in this item.

Yes

FMPA supports this exclusion. For the sake of clarity, the final sentence should be revised to read as follows: “For purposes of this exclusion, a “small utility” is an entity that performs a Distribution Provider or Load Serving Entity function but is not required to register as a Distribution Provider or Load Serving Entity by the ERO.”

Yes

No

Individual

Jianmei Chai

Consumers Energy Company

No

The generic inclusion within the definition of BES, of the NERC-defined term, “Transmission”, has the potential to cause confusion and controversy. Small entities that own facilities that have been approved by FERC as being classified as “distribution” according to the FERC Order 888 seven-factor test, could be viewed as owning “Transmission.” Therefore, Regional Entities might require these small entities to register as Transmission Owners, Transmission Operators, and/or Transmission Planners. However, these facilities may not form a contiguous system, as expressed in the defined term, “Transmission” and being “An interconnected group of lines and associated equipment”. Alternatively, such facilities, because they do not form such a contiguous system (and thus are not, and should not be, classified as Transmission) may inappropriately be excluded from the BES. Therefore, even though “Transmission Facilities” represent a subset of the BES, we urge that NERC avoid the use of the term, “Transmission” within the definition of BES. NERC should more explicitly describe, in a functional manner independent of the term, “Transmission”, what is intended to be included within the core definition. For NERC to fail to do so is to invite challenges to the final definition as well as establish inappropriate reliability gaps. We agree with GO/TO Interface Project 2010-07 method of resolving reliability gaps by expanding requirements to the Distribution Provider function as necessary. We propose that “All Transmission Elements …” be replaced with “All network System Elements …”

No

The facilities currently listed in Inclusion I1 are already arguably included in the core definition. Inclusion I1 should be reclassified as an Exclusion to cover transformers that do not meet the criteria in Inclusion I1 such as those transformers with a single winding of 100kV or higher. Following is our proposed language for the exclusion we are proposing. Transformers, other than Generator Step-up (GSU) transformers, including Phase Angle Regulators, that have less than two windings of 100 kV or

higher.
Yes
We are supportive of Inclusion I2. Generators 20MVA and greater with terminals through a GSU connected at 100kV and above are treated as Bulk Electric System at this time along with their radial connections to the Transmission system. We agree with the SDT that no technical rationale for changing this condition exists.
Yes
No
We recommend that the word, primary, be added, and that the phrase, “regardless of voltage” be removed: “Blackstart Resources and the designated primary blackstart Cranking Paths identified in the Transmission Operator’s restoration plan.” NERC’s May 19, 2011 webinar described this as applying only to the path directly from the blackstart unit to the Transmission System. Is this correct? If so, please clarify within the definition.
Yes
Yes
Yes
Yes
LDN needs to be specifically defined. The draft appears to come close with the term “Groups of Elements operated above 100kV that distribute power to Load rather than transfer bulk power across the interconnected System.” These Groups of Elements should be contiguous to avoid confusion. We are also concerned with the limits on connected generation.
No response to be provided to this question.
No
The proposed definition appears to treat “BES” and “Transmission” synonymously, and this is highly likely to have a significant effect on registration, even if this is not intended. To support consistency between reliability and tariffs, we recommend that more direct consideration be given to the FERC 7-factor test that has been consistently used to delineate transmission facilities for tariff purposes, and to discriminate between registration requirements for TO and DP based on this delineation. Further, reliability gaps will not be created (or can be addressed by minor changes to the applicable standards) if this recommendation is adopted because all aspects of the applicable standards/requirements are (or will be) captured by the current registration process.
Yes
The proposed definition creates a tension between FERC Order 888 and the resulting 7-factor test as applied for tariff purposes, and the registry criteria for registration of Transmission Owners and Transmission Operators. Entities with assets defined by FERC as Distribution might challenge any rules that treat Distribution assets as Transmission as not being consistent with the Federal Power Act of 2005.
Yes. We propose an alternative core BES definition to read as follows: “All network System Elements operated at 100 kV or higher, Real Power resources as described below, and Reactive Power resources connected at 100 kV or higher unless such designation is modified by the list shown below.” We support extending the transition period to 24 months.
Individual
Chad Bowman
Chelan PUD - CHPD
No
As a general matter, Chelan County Public Utility District (CHPD) supports the approach the Standards Development Team (“SDT”) has taken to defining the Bulk Electric System (“BES”). The changes made in the revised core definition are helpful and represent significant progress toward an acceptable definition. With an effective and efficient exclusion process, the draft will better define the

BES as a whole. We urge the SDT to bear in mind the restrictions contained in Section 215 of the Federal Power Act ("FPA") The "bulk-power system" (As per FERC, we treat the statutory term "bulk-power system" as equivalent to the term ordinarily used in the industry, "Bulk Electric System") definition imposes a clear limit on the reach of the mandatory reliability regime. The BES is made up of only those "facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)" and "electric energy from generation facilities needed to maintain transmission system reliability." Congress reinforced that limit in Section 215(i), where it emphasized that the FPA authorizes the imposition of reliability standards "for only the bulk-power system." CHPD is concerned that the SDT's proposed definition is overly-broad, and that it will sweep in many Elements that have little or no material impact on the reliable operation of the interconnected bulk transmission grid. For example, the definition uses the arbitrary 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators. Accordingly, for the BES definition to conform to the requirements of the statute, the SDT must adopt an effective mechanism to exempt facilities like these that are improperly swept in by the SDT's brightline approach to inclusions and exclusions. For this reason, the Exception process to accompany the SDT's definition is of critical concern. If the SDT incorporates this statutory language as its core definition, it will have addressed FERC's primary concern with a minimum of disruption to the current NERC system of definitions. The definition could then be further elaborated to show specific points of demarcation for each inclusion and exclusion similar to that Proposal 6 from the WECC Bulk Electric System Definition Task Force ("BESDTF") team to further delineate BES and non-BES facilities.

No

In concept, we support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. In this regard, we note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams noting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort. Also, the reference to "two windings of 100 kV or higher" may create some confusion because many three-phase transformer banks have 6 or 9 windings, depending on whether the transformer has a tertiary. We suggest clarifying this provision by changing the clause reference two windings to read: "the two highest voltage transformer windings of 100 kV per phase that are connected to the Bulk Electric System." We again urge the SDT to consider further delineation of points of demarcation similar to WECC BESDTF Proposal 6.

No

CHPD is concerned that I2 inclusion criteria that includes the arbitrary 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted improperly expands the BES definition to include generators that the statute requires to be excluded. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Unfortunately, the SDT appears to have concluded that any interconnection facility operating above 100-kV should be classified as BES. The result will be to require Generation Owners to register as Transmission Owners/Operators, as well, producing substantial additional compliance costs for those Generation Owners but resulting in little or no improvement in the reliability of the BES. We recommend that the SDT, like the Project 2010-07 SDT (commonly referred to as the GO/TO Team), give careful consideration to the practical results of its recommendations rather than relying on abstract conclusions about whether a "contiguous" or "non-contiguous" BES is more desirable. We are concerned that the SDT's pursuit of a "contiguous" BES will result in a substantially over-inclusive BES definition. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. NERC's Standards Drafting Team for Project 2010-07, has already considered this question and, based on an in-depth review of potentially applicable reliability

standards, has concluded that generation interconnection facilities, even if operated above 100-kV, need to comply only with a limited set of reliability standards in order to achieve the reliability goals. Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability.
No
CHPD is concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition.
Yes
Including "all" blackstart and blackstart cranking paths in the BES may ultimately provide an incentive to the electric industry to reduce the number of resources with blackstart capability. We therefore suggest that essential blackstart resources identified by the Regional Entity should be included in the Bulk Electric System, but non-essential blackstart resources need not be.
No
CHPD agrees that it is important to address wind generation facilities and similar generation facilities in which a large number of generating units, each with a relatively small capacity, are clustered and fed into the grid at a single interconnection point. That being said, CHPD is concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials should be retained. We believe the exclusion as drafted adequately defines radials.
No
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold (through reference to Inclusion I2) lacks an adequate technical justification in this context. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit ("standby, back-up, and maintenance power…") should be eliminated.
Yes
CHPD strongly supports the categorical exclusion of Local Distribution Networks from the BES. In fact, for reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are, of course, probably the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. CHPD supports the LDN exclusion, but we believe the exclusion should be refined in the following respects: • The SDT's draft states that: "LDN's are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load." We recommend that the SDT revise the sentence quoted above to delete the word "solely" and add an additional phrase at the end so that the revised sentence will read as follows: "LDN's are connected to the Bulk Electric System (BES) at more than one location to improve the level of service to retail customer Load and not to accommodate bulk transfers of power across the interconnected bulk system." By instituting this suggestion, the SDT would emphasize the key difference between an LDN, which is designed to reliably serve local, end-use retail customers,

and the BES, which is designed to accommodate bulk transfer of power at wholesale over long distances.
Yes
CHPD supports the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that can ill afford the substantial costs that accompany imposition of mandatory compliance with reliability standards. Further, we agree that the small utilities covered by the exemption will have no measurable impact on the operation of the interconnected BES. In the Pacific Northwest, many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.
No
While CHPD agrees that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing most local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed at greater length in our answer to Question 1, CHPD believes that the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES. As discussed in our answer to Question 3, CHPD notes that exclusion of facilities from the BES does not mean that owners of those facilities are entirely exempt from reliability standards. On the contrary, the statute provides that "users" of the BES can be subject to reliability regulation. Hence, even where an entity does not own BES assets, it could be required to, for example, provide necessary information to the applicable Reliability Coordinator and to participate in the regional Under-Frequency Load Shedding program by setting the UFLS relays in its Local Distribution Network at the appropriate settings. We note that participants in the WECC BESDTF Task Force generally agreed that appropriate information should be provided by non-BES entities, although there was considerable concern related to ensuring that the provision of information was not unduly burdensome.
Yes
The Exceptions process is a necessary part of making this proposal compliant with the Federal Power Act. As noted in our responses to Question 1 and Question 11, we believe the basic SDT proposal is potentially in conflict with the limitations of the Federal Power Act, and in particular the statutory exclusion for facilities used in the local distribution of electric energy. The SDT's approach can meet the statutory requirements only if the Exception process currently under development results in facilities that are not properly classified as BES being exempted from regulation as BES facilities.
CHPD has these additional concerns: • The current definition provides that "Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process." CHPD is concerned that the SDT carefully delineate which entity has the burden of proof in the exclusion process. The WECC BESDTF approach, which we commend to the SDT, laid out these burdens in some detail. Under that approach, essentially, if a facility is excluded from the BES by virtue of the specific exclusions listed in the definition, the Regional Entity bears the burden of proving that the facility nonetheless has a material impact on the interconnected bulk transmission system and therefore should be included in the BES. On the other hand, if a facility is classified as BES by virtue of the list of inclusions set forth in the BES definition, it can still escape classification as BES, but bears the burden of demonstrating that its facility has no material impact on the interconnected transmission system. We urge the SDT to give careful consideration to these burden-of-proof questions and to follow the lead of the WECC BES Task Force. • For the reasons we have explained in our answer to Question 11, we believe the Exception process is critical both to ensure that the BES definition is effective in producing measurable gains to bulk system reliability and to ensuring that the definition will comply with the limitations Congress placed in Section 215. Hence, we believe the entire BES definition, including the Exception process and related procedures, should be vetted through the NERC Standards Development Process, including the full comment periods and ballot approvals provided for in that process. We are concerned that important elements of the BES definition have been assigned to the Rules of Procedure Team, and that changes in the Rules of Procedure are subject to approval in a process that provides considerably less due process and industry input than the Standards Development Process. Accordingly, we urge that all elements of the BES definition, including those elements that have been assigned to the Rules of Procedure Team, be vetted through the Standards Development Process.

Group
Santee Cooper
Terry L. Blackwell
Yes
We agree with the changes of adding the inclusions and exclusions. We recommend that I3 be 100 MVA or higher. Was there a rationale for using 75 MVA?
Yes
Yes
The inclusion for generating units needs to be consistent with regional entities exclusion criteria for MODO24.
No
We recommend that it say "Single generating units located at a single site with a capacity of greater than or equal to 100 MVA". The use of aggregate capacity greater than 75 MVA pulls in some very small units.
Yes
Yes
What is the rationale for 75 MVA.
Yes
Yes
Yes
Yes
Yes
The commission should remain open to future modifications of the bright-line core definition and specific inclusion and exclusions.
What was the rationale for using aggregate capacity greater than 75 MVA on I2 and I5. I2 and I3 inclusions are not the same as defined by the SERC Regional Entity for MOD-024. The SERC guideline does not include an aggregate value for generating units.
Individual
Michelle R D'Antuono
Occidental Energy Ventures Corp. (answers include all various Oxy affiliates)
No
Please see discussion in response to Questions 2, 7, 9, 10, 11, 12 and 13.
No
Inclusion I1 would be unlawful to the extent that it would include the transformers of retail customers that have self-provided “hard-tapped” facilities behind the retail delivery point. (For the purposes of these Comments, “hard-tapped” means connected without an automatic fault-interrupting device).
No
(Note: Inserted language provided in brackets; deleted language denoted by empty brackets: [ ].) Exclusion E1 contradicts the plain language of Section 215 of the Federal Power Act (“FPA”), which

denies FERC jurisdiction over facilities used in the local distribution of electric energy (16 U.S.C. § 824o(a)(1) (stating the Bulk Power System "does not include facilities used in the local distribution of electric energy")). For example, Exclusion E1 would impermissibly include within the definition of the Bulk Electric System ("BES") a retail customer's self-provided "hard-tapped" radial line that is located behind the retail delivery point. The Standard Drafting Team ("SDT") stated in commentary to Exclusion E1 that it has clarified the existing exclusion for radial systems by specifying that protection for the BES is a required element, and that it believes that faults on radial lines without protection devices could negatively impact the BES. Even if faults on radial lines could negatively impact the BES, however, radial lines that are used in local distribution of electric energy are outside of FERC's jurisdiction. Congress did not place any qualifications on the exclusion of facilities used in the distribution of electric energy, and certainly did not make the exclusion contingent on whether the facility is "originating with an automatic interruption device." Exclusion E1 would rewrite Section 215 of the FPA to exclude from the definition of the BES only "facilities [with an automatic interruption device] used in the local distribution of electric energy." Such an interpretation, as discussed further below in response to Questions 11 and 12, is unlawful as it is in direct contravention of Congress' intent. To make Exclusion E1 consistent with the jurisdictional requirements of Section 215 of the FPA, Exclusion E1 could be rewritten as follows: Any radial system which is described as connected from a single Transmission source [ ] and: a) Only serving Load. [ ] Or, b) Only including generation resources not identified in Inclusions I2, I3, I4 and I5. Or, c) Is a combination of items (a.) and (b.) where the radial system serves Load and includes generation resources not identified in Inclusions I2, I3, I4 and I5. Please see further discussion in response to Questions 11, 12 and 13.

Yes

No

(Note: Inserted language provided in brackets; deleted language denoted by empty brackets: [ ].) Exclusion E3 is also contrary to the plain language of Section 215 of the FPA. The SDT stated in commentary to E3 that it "believes that any network that simply supports distribution and is providing adequate protection should be excluded from the BES." This statement highlights the fundamental disconnect between the proposal and Section 215 of the FPA, which excludes facilities used in the local distribution of electric energy from the definition of the BES regardless of whether the facilities are "providing adequate protection." That is, Section 215 of the FPA states that the definition of the BES excludes "facilities used in the local distribution of electric energy," not "facilities used in the local distribution of electric energy [providing adequate protection]." With respect to the enumerated criteria in Exclusion E3, the requirement that Local Distribution Networks ("LDNs") "must be connected through automatic fault-interrupting devices" violates the FPA because, as discussed in response to Question 7, it places a condition on the unqualified exemption granted by Congress to facilities used in the local distribution of electric energy. Moreover, the other enumerated criteria also fail under Section 215 of the FPA and case law because they ignore, as discussed further in response to Question 11, a long line of precedent that requires a fact-specific analysis to be conducted to determine whether a facility is used in local distribution (see, e.g., Order No. 888 at 31,980). To make Exclusion E3 consistent with the requirements of Section 215 of the FPA and case law, Exclusion E3 could be rewritten as follows: E3 – [All facilities used in the distribution of electric energy] (["]Local [D]istribution [N]etworks,[" or "]LDNs["]): Groups of Elements operated above 100 kV that distribute power to Load rather than transfer bulk power across the interconnected System. LDN[]s are [normally] connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load. The LDN is characterized by all of the following: a) [ ] b) Limits on connected generation: [Generally], neither the LDN, nor its underlying Elements (in aggregate), includes more than 75 MVA generation; c) Power flows only into the LDN: The generation within the LDN [normally does] [ ] not exceed the electric Demand within the LDN; d) Not used to transfer bulk power: The LDN is [generally] not used to transfer energy originating outside the LDN for delivery through the LDN; and e) Not part of a Flowgate or transfer path: The LDN normally does not contain a monitored Facility of a permanent flowgate in the Eastern Interconnection, a major transfer path within the Western Interconnection as defined by the Regional Entity, or a comparable monitored Facility in the Quebec Interconnection, and is not a monitored Facility included in an Interconnection Reliability Operating Limit (IROL). Please see further discussion in response to Questions 11 and 12.

No

There is no legal basis to distinguish between “small utilities” and other similarly situated entities. Thus, to avoid unlawful discrimination, Exclusion E4 should be revised as follows: (Deleted language denoted by empty brackets: [ ].) Exclusion E4: Transmission Elements, from a single Transmission source connected at a voltage of 100 kV or greater [ ] whose connection to the BES is solely through this single Transmission source, and without interconnected generation as recognized in the BES Designation Inclusion Items I2, I3, I4, or I5. [ ]

No

Local distribution facilities have not been excluded from the proposed definition of the BES. As FERC recognized in Order No. 743-A in directing NERC to exclude local distribution facilities from the revised definition of the BES, any definition that does not exclude all “facilities used in the local distribution of electric energy” is unlawful. FERC, as well as federal courts, have repeatedly stated that whether a facility is used in local distribution must be determined on a “case-specific” basis (see, e.g., Order No. 888 at 31,980-81). As a threshold matter, before devoting any additional time and resources to developing a definition of the BES, there must be a clear understanding of the factors to consider when determining whether a facility is either a local distribution facility or a transmission facility. Currently, such a determination is made by considering a “seven-factor test” that FERC has adopted, and the U.S. Supreme Court has upheld. The “seven-factor test,” of which no one factor is determinative, evaluates the following indicators: (1) Local distribution facilities are normally in close proximity to retail customers. (2) Local distribution facilities are primarily radial in character. (3) Power flows into local distribution systems; it rarely, if ever, flows out. (4) When power enters a local distribution system, it is not reconsigned or transported on to some other market. (5) Power entering a local distribution system is consumed in a comparatively restricted geographical area. (6) Meters are based at the transmission/local distribution interface to measure flows into the local distribution system. (7) Local distribution systems will be of reduced voltage (Order No. 888 at 31,981). The seven-factor test, which recognizes that a bright-line between transmission and distribution is a not a workable approach, is designed to ensure FERC does not impermissibly usurp state and local regulation of local distribution facilities. There is no evidence that the seven-factor test was considered in drafting the proposed definition of the BES. Please see further discussion in response to Question 12.

Yes

The proposed definition conflicts with Section 215 of the FPA and case law because it ignores years of precedent regarding what constitutes “facilities used in local distribution” and defines the BES in such a way as to possibly cover local distribution facilities as well as transmission facilities. Specifically, FERC has jurisdiction over “all users, owners and operators of the bulk-power system” under Section 215 of the FPA (16 U.S.C. § 824o(b)(1)). The bulk-power system is defined as: “(A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy” (Id. at § 824o(a)(1)). By the plain language of Section 215 of the FPA, FERC’s jurisdiction over the Bulk Power System cannot include any “facilities used in the local distribution of electric energy.” FERC has recognized that “[s]ince such facilities are exempted from the Bulk-Power System, they also are excluded from the bulk electric system” (Order No. 743-A at P 25). Congress specifically recognized that while facilities used in the local distribution of electric energy may be part of the Bulk-Power System, they are not FERC jurisdictional. Thus, “facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)” that are used in the local distribution of electric energy are not jurisdictional regardless of the potential reliability impact of the facilities. The proposed definition of the BES would rewrite Section 215 of the FPA to exclude only “facilities used in local distribution of electric energy [unless needed for reliability purposes].” As the DC Court of Appeals stated in Detroit Edison Co. v. FERC: “[s]uch an interpretation would eviscerate state jurisdiction over numerous local facilities, in direct contravention of Congress’ intent” (Detroit Edison Co. v. FERC, 334 F.3d 48, 54 (U.S. App. D.C. 2003) (citation omitted)). In Detroit Edison Co. v. FERC, the DC Court of Appeals rejected FERC’s proposed definition of a “FERC-jurisdictional distribution facility” as any distribution facility that is not “used exclusively to provide service to unbundled retail customers” (Id.). The Court stated: “FERC’s position contradicts the plain language of the FPA,” and further that “FERC would rewrite the statute to exclude only ‘facilities used exclusively in local distribution’” (Id.). The exclusion of facilities used in the local distribution of electric energy from the definition of the BES does not mean that NERC lacks

the ability to maintain the reliability of the BES. For example, if NERC determined that a retail customer's self-provided "hard-tapped" radial line that is located behind the retail delivery point created a reliability issue, NERC could require that the transmission facilities be equipped with automatic fault-interruption devices. NERC could not, however, define the BES to include such local distribution facilities, which is the result of the proposed bright-line core definition and specific inclusions and exclusions. While FERC "granted NERC discretion" in developing the revised definition of the BES because FERC wanted to give NERC "the greatest amount of flexibility to utilize its technical expertise" (Order No. 743-A at PP 70-71), NERC's discretion is not unbounded. Moreover, while FERC stated that it "will evaluate whether the [BES definition] proposal results in any conflicts with the statutory language" (Id. at P 72), it is imperative that NERC work within the statutory limitations of Section 215 of the FPA as to prevent submitting a proposal to FERC that is fundamentally unlawful. It would be a colossal waste of government and industry resources to develop and advance a definition that cannot withstand basic legal review. As provided above, the following are suggested language changes that may clarify the issue: Exclusion E1 - Any radial system which is described as connected from a single Transmission source [ ] and: a) Only serving Load. [ ] Or, b) Only including generation resources not identified in Inclusions I2, I3, I4 and I5. Or, c) Is a combination of items (a.) and (b.) where the radial system serves Load and includes generation resources not identified in Inclusions I2, I3, I4 and I5. Exclusion E3 – [All facilities used in the distribution of electric energy] (["]Local [D]istribution [N]etworks,[" or "]LDNs["]): Groups of Elements operated above 100 kV that distribute power to Load rather than transfer bulk power across the interconnected System. LDN[]s are [normally] connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load. The LDN is characterized by all of the following: a) [ ] b) Limits on connected generation: [Generally], neither the LDN, nor its underlying Elements (in aggregate), includes more than 75 MVA generation; c) Power flows only into the LDN: The generation within the LDN [normally does] [ ] not exceed the electric Demand within the LDN; d) Not used to transfer bulk power: The LDN is [generally] not used to transfer energy originating outside the LDN for delivery through the LDN; and e) Not part of a Flowgate or transfer path: The LDN normally does not contain a monitored Facility of a permanent flowgate in the Eastern Interconnection, a major transfer path within the Western Interconnection as defined by the Regional Entity, or a comparable monitored Facility in the Quebec Interconnection, and is not a monitored Facility included in an Interconnection Reliability Operating Limit (IROL). Exclusion E4 – Transmission Elements, from a single Transmission source connected at a voltage of 100 kV or greater [ ] whose connection to the BES is solely through this single Transmission source, and without interconnected generation as recognized in the BES Designation Inclusion Items I2, I3, I4, or I5. [ ]
Occidental Energy Ventures Corp ("OEVC") would like to emphasize that the proposed definition of the BES does not only impact OEVC and its affiliates. The proposed BES definition would include numerous facilities that are used for the local distribution of electric energy, not transmission, in direct contravention of Section 215 of the FPA. For example, there are likely hundreds, if not thousands, of retail customers that have self-provided "hard-tapped" facilities behind the retail delivery point. Those retail customers, many of who are likely unaware of the proposed BES definition, much less its impact, will have their facilities under the proposed BES definition suddenly become transmission facilities simply because their facilities are not separated from the BES by an automatic fault-interruption device.
Individual
Kenneth A. Goldsmith
Alliant Energy
No
We believe the first sentence should be revised to read "Any radial system which is described as connected from a single Transmission source at 100 kV or above originating with . . ." In this way it is clear that E1 covers radial transmission, not radial distribution systems.

Yes

In general we believe that the bright line has been created. There should however be one additional exclusion – Distribution Protection Systems designed specifically to protect Distribution System assets should not be considered part of the BES, even if they open an element of the BES (ie; Distribution Breaker Failure Relaying), as long as the action is to protect the Distribution System and not the BES.

Individual

Deborah J Chance

Chevron Global Power, a division of Chevron U.S.A. Inc.

See response to question 13

Yes

Chevron U.S.A. Inc. has reviewed the proposed Bulk Electric System definition and is concerned that the proposed changes designed to enhance reliability and accountability of Transmission and Generation are inadvertently catching parties whose prime operations are distribution in nature. Chevron is proposing minor changes that will not affect the necessary regulation of the bulk power industry, but will exempt parties that are not crucial to reliability and provide mostly, if not entirely, distribution or self use service. In remote areas of west Texas, Chevron has hundreds of non contiguous producing properties and facilities located over hundreds of square miles. In some cases where the utility was close and had the capability to serve, Chevron took utility service. Where service was not available or the utility did not have the capability, Chevron built its own private power distribution system to service its own facilities. Chevron has no generation and takes all of its power from transmission providers. In at least one instance Chevron takes power at over 100 kV from a transmission provider. Chevron has an automated interruption device between its facilities and the transmission facilities. Currently this field takes power from an ERCOT transmission owner at above 100 kV and then distributes the power over a Chevron owned and operated power distribution system to Chevron facilities. This Chevron system includes a substation, transformers and other facilities necessary to take power at above 100 kV and distribute and step down the power as necessary. Chevron uses the power for offices, repair facilities, oil wells, separation facilities, gas plants, drilling new wells and other related oil and gas activities. Located within the area of the Chevron power distribution system are ranchers, pump stations, third party oil wells and other small users. These parties are not located near any utility or coop facilities. For decades Chevron has worked to accommodate these parties by working with the local utility, transmission owners and the Texas Public Utility Commission to allow electrical service to these remote users. Many of these ranchers and other users are not located near any utility lines. Costs could run to the hundreds of thousands of dollars (or more) to provide an interconnect from the utility. Instead of leaving these parties with no electrical service, a procedure was developed that allowed parties such as Chevron to accommodate the small end user. For example if a utility/coop was unable or unwilling to serve a rancher at a reasonable cost, the rancher could approach Chevron. The goal would be to execute a three party

agreement between the rancher, Chevron and the service provider. Under the terms of the agreement, the Rancher would interconnect with the Chevron system. A utility quality meter capable of remote reading would be installed and the rancher would be responsible for all costs beginning at the meter. The rancher contracts with a power provider for his power. Every month the meter between the Transmission owner and Chevron would be read. This smart meter located at the interconnect with the transmission system and its soft ware would show all deduct metering (such as our rancher) so that any non Chevron parties on the Chevron distribution system's usage would clearly be listed. The transmission owner then provides the billing information to the rancher's power provider. Chevron receives no compensation from the rancher, power provider or transmission owner. Chevron provides the service strictly on an accommodation basis. The Texas Public Utility Commission recognizes the needs of parties in remote areas of Texas and has blessed this type of service. Chevron is not considered a utility for providing this type of service. Chevron is concerned that the above described private power distribution system may inadvertently be forced to register as a bulk electric system provider. This private distribution system is clearly at the terminus of a radial line and provides service to Chevron owned and operated facilities. The system is large in area and has been built over a period longer than any current employee's memory. Through what can be called "accidents of history" and a good neighbor policy, Chevron has accommodated parties that otherwise could not connect to utility quality power. This arrangement is blessed and encouraged by the State PUC. Chevron charges nothing for the service. The system is entirely distribution in nature and does not contribute to the reliability of the grid in any manner. The intent of the current rule making is not to encompass such a system. NERC needs to encourage parties such as Chevron to help bring power to remote areas and not discourage, or worse yet greatly increase the cost to provide such service. Chevron requests that the NERC include in its definition a statement making it clear that systems such as those described above should not be required to register. Chevron supports the technical changes suggested by ELCON in its filing. A party's facility should not be considered an essential facility where the facility would otherwise be considered exempt except that it is providing distribution services as an accommodation to third parties. This is especially true when 1. The incumbent utility or coop is unable or unwilling to serve the third parties at a reasonable cost 2. The service to the third party is provided as an accommodation 3. The facility is not generating and/or selling power to the third party 4. The third party is purchasing power from a power provider
Individual
Scott Bos
Muscatine Power and Water
Yes
Would like to ask the SDT to please affirm that Reactive Resources within the BES definition are intended to be generator resources and not static resources.
Yes
Yes
No
The phrase "connected through a common bus" is taken from the NERC Compliance Registry Criteria. MP&W would agree with this language if the intent is to let entities categorize the applicable multiple generating units as part of the BES only when it is connected to one (common) bus. However, if the intent is for entities to also classify multiple generation as part of the BES when it is connected through two or more GSUs to different bus sections of a set of (common) buses that are interconnected through bus-tie breakers (which may be done to provide improved reliability and maintenance flexibility), then using language like "connected through a common bus or set of interconnected buses" would be more appropriate.
Yes
This Inclusion I4 provides a defense in depth with CIP-002-4.
No
MP&W recommends to have Inclusion 5 be revised as follows "Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a collector system from the point where the aggregated rating exceeds 75 MVA through a common point of

interconnection to a system Element at a voltage of 100 kV or above.“
Yes
MP&W recommends to clarify the phrase “originating with an automatic interruption device” regarding the location of the interruption device. An entity may not have interruption devices at both ends of a radial fed line. If the interruption device is at the load end of the radial line, then the “up-stream” portion of the radial line is unprotected. Furthermore, please make it unambiguous that all facilities operated at less than a 100kV are excluded unless those facilities meet the criteria of an Inclusion.
Yes
No
The SDT is defining what a Local Distribution Network is but the expression “transfer bulk power” is ambiguous. Please clarify the purpose of this exclusion.
Yes
Yes
Yes
Within FERC’s definition of Bulk Power System, it is plainly stated that BPS does not include facilities used in the local distribution of electrical energy. Does this support or contradict the SDT's concept of Local Distribution Network?
In order to provide a unambiguous and concise definition of the BES, we ask the SDT to please include in the bright-line criteria that “all facilities less than a 100kV are excluded unless those facilities meet the criteria of an Inclusion.”
Group
NERC Staff
David Taylor
No
The core definition lacks a clear bright-line designation for generating resources. For such resources, the core definition only references “Real Power resources as described below” which in and of itself is not a bright-line designation. A bright-line designation for generating resources needs to be included in the core definition. A bright-line can be established in the core definition by including generating units based on the MVA ratings as found in current Inclusions I2, I3, and I5. Additional generating unit specifications could be included in the core definition or as Inclusions such as the existing Inclusion I4 for black start generating units. >>>>>>>>>> The core definition also lacks clarity with respect to the facilities included under “Reactive Power resources” and may unintentionally omit Reactive Power resources necessary for reliable operation of the BES. The definition as proposed excludes devices such as shunt reactors connected to the tertiary terminals of a BES transformer and synchronous condensers connected through a transformer, and is unclear whether a static var compensator (SVC) with thyristor switched capacitors and thyristor switched or controlled reactors operated below 100 kV, but connected to the BES through a transformer (similar to a generator connected to the BES through a generator step-up transformer) is included in the BES definition. The qualifications on Reactive Power resources recommended below will include the necessary transmission resources noted above, without unintentionally including distribution capacitors connected on the low voltage side of a distribution transformer. >>>>>>>>>> These concerns can be addressed by revising the core definition as follows: >>>>>>>>>> “Bulk Electric System (BES): All Transmission Elements operated at 100 kV or higher; Real Power resources including, * Individual Generating Units greater than 20 MVA (gross nameplate rating), * Multiple generating units located at a single site with aggregate capacity greater than 75 MVA (gross nameplate rating) connected through a common point of interconnection, * Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a collector system through a common point of interconnection, and * Blackstart Resources and the designated blackstart Cranking Paths identified in the Transmission Operator’s restoration plan regardless of voltage; and Reactive Power devices (capacitive or inductive, static or actively controlled) greater than 20 Mvar that are directly connected at 100 kV or higher, or connected through a transformer at 100 kV or

higher at the site of transformation; unless such designations are modified by the list of Inclusions and Exclusions shown below." >>>>>>>>>> (Note that the rationale for excluding the 100 kV interconnection threshold on the first three bullets is provided in our responses to Questions 3, 4, and 6.) >>>>>>>>>> In conjunction with the alternative language for the core definition proposed above, NERC staff proposes the following definition of Generating Unit be added to the NERC Glossary of Terms used in Reliability Standards: >>>>>>>>>> Generating Unit - A device, whether spinning or static and whether connected synchronously, asynchronously, or electronically coupled, that produces electrical energy from another source of energy, either directly from the other energy source (such as a combustion turbine from natural gas or light distillate oil, a wind turbine from wind, or a solar array from the sun) or through a storage medium (such as pumped storage hydro, a flywheel, compressed air, or battery).

No

Inclusion I1 is acceptable in general; however, there are two items that should be modified. >>>>>>>>>> The reference to "two windings" is technically incorrect because it would exclude autotransformers with two terminals at 100 kV or higher since the primary and secondary terminals are connected to the same winding. It would be better to replace the phrase "with two windings of 100 kV or higher" with the phrase "with two or more terminals connected at 100 kV or higher." >>>>>>>>>> The phrase "other than Generator Step-up (GSU) transformer" is unnecessary. The qualifier "with two or more terminals connected at 100 kV or higher" already will exclude GSU transformers. In unusual cases in which a generator is connected to the system through a transformer that does have two terminals connected at 100 kV or higher the transformer should be included by Inclusion I1.

No

The interconnection voltage threshold should be removed. The contribution of a generator to system reliability is a function of its MVA rating rather than its interconnection voltage. All generating units greater than 20 MVA should be included in the BES definition because all such units provide similar contributions to system reliability. >>>>>>>>>> Also, the specific inclusion of the GSU transformer implies that all other components of a generating unit, such as its unit auxiliary transformer, start-up transformer, governor, exciter, power system stabilizer, etc., are excluded. The SDT should define "generating unit" or otherwise clarify which components of a generating unit are included in the BES definition.

No

The interconnection voltage threshold should be removed. The contribution of a multiple generating units at a single site to system reliability is a function of the aggregate MVA rating rather than the interconnection voltage. All locations with multiple generating units with aggregate capacity greater than 75 MVA should be included in the BES definition because all such units provide similar contributions to system reliability. >>>>>>>>>> As noted in the comment on Question 3 of this comment request, the specific inclusion of the GSU transformer implies that all other components of a generating unit, such as its unit auxiliary transformer, start-up transformer, governor, exciter, power system stabilizer, etc., are excluded. The SDT should define "generating unit" or otherwise clarify which components of a generating unit are included in the BES definition. >>>>>>>>>> The use of the term "common bus" introduces ambiguity into the definition. It would be better to replace the phrase "connected through a common bus" with the phrase "connected through a common point of interconnection" which also provides consistency with the description of Inclusion I5.

Yes

No

We agree that Inclusion I5 is an effective method for including dispersed resources; however, the interconnection voltage threshold should be removed. The contribution of dispersed power producing resources to system reliability is a function of the aggregate MVA rating rather than the interconnection voltage. All dispersed resources with aggregate capacity greater than 75 MVA should be included in the BES definition because all such units provide similar contributions to system reliability.

No

Exclusion E1 would be acceptable if (i) switching the radial system to connect it to the BES at a second point of interconnection is modified to require that when a make-before-break connection is

used, it occurs at a voltage below 100 kV and (ii) the automatic interrupting device is not excluded as part of the radial system. >>>>>>>>>> The allowance for make-before-break connections of radial facilities at voltages 100 kV or higher will result in operating conditions with the potential to degrade system reliability if the subject Elements are not planned, designed, maintained, and operated in accordance with NERC Reliability Standards. The risk is most pronounced when the make-before-break connection is automated, increasing the likelihood of adverse reliability impacts occurring as a result of placing the system into an unplanned operating condition. If the make-before-break connection is made at a voltage below 100 kV the impedance in the parallel connection will mitigate the reliability impact. When the radial system is connected to the BES at a second point of interconnection 100 kV or higher, the radial system should not be excluded unless a break-before-make connection is used because system protection during the momentary parallel network operation is critical to overall BES reliability. >>>>>>>>>> The reason for requiring an automatic interrupting device between the BES and the excluded radial system is to prevent faults and other abnormal conditions on the radial system from negatively impacting reliability of the BES. Given the reliance on the interrupting device to support BES reliability, it is appropriate to include the interrupting device in the BES so that it is planned, designed, maintained, and operated in accordance with NERC Reliability Standards the same as other BES Elements. Thus, when excluding a radial system operated at 100 kV or higher, the BES line of demarcation should be on the load side of the automatic interrupting device. >>>>>>>>>> The main clause and part (a) of the exclusion should be changed to read; >>>>>>>>>> Exclusion E1 – Any radial system which is described as connected from a single Transmission source originating on the load side of an automatic interruption device and: a) Only serving Load. A normally open switching device between radial systems may operate in a 'break-before-make' fashion at 100 kV or higher or a 'make-before-break' fashion below 100 kV to allow for reliable system reconfiguration to maintain continuity of electrical service. Or, etc. …

No

The second condition (ii) in E2 is confusing. While the condition is appropriate and has specific meaning, the meaning will not be readily understood by most users of the definition. This condition should be clarified.

No

Exclusion E3 is acceptable in general; however, (i) including the word "distribution" in the exclusion could be interpreted to imply that certain distribution facilities are included in the BES unless specifically excluded, (ii) item d) is unclear as to whether it applies to any parallel flow or only to parallel flow for which the group of Element(s) are part of the contract path, and (iii) interrupting devices should be included in the BES for the same reasons as stated above for Exclusion E1. >>>>>>>>>> The concern with the word distribution in the term "Local Distribution Network" can be avoided by eliminating use of this phrase. The proposed definition already defines the Elements covered by Exclusion E2 and does not require defining a term for use in this standard. An alternate solution would be to establish a different term to describe the groups of Elements that does not include the word distribution. >>>>>>>>>> The phrase "is used to" in item d) lacks clarity. Clarity should be provided by stating that the group of Elements does not transfer energy originating outside the group of Elements; this is consistent with item c) that requires that power flows only into the group of Elements. >>>>>>>>>> The reason for requiring automatic interrupting devices between the BES and the excluded LDN is to prevent faults and other abnormal conditions in the LDN from negatively impacting reliability of the BES. Given the reliance on the interrupting devices to support BES reliability, it is appropriate to include the interrupting devices in the BES so that they are planned, designed, maintained, and operated in accordance with NERC Reliability Standards the same as other BES Elements. Thus, when excluding groups of Elements at 100 kV or higher, the BES line of demarcation should be on the load side of the automatic interrupting devices. >>>>>>>>>> To address our concerns, Exclusion E3 should be changed to read: >>>>>>>>>> E3 - Groups of Elements operated above 100 kV that distribute power to Load rather than transfer bulk power across the interconnected System. Such groups of Elements are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load. These groups of Elements are characterized by all of the following: a) Separable by automatic fault interrupting devices: Wherever connected to the BES, the group of Elements must be connected through automatic fault-interrupting devices (the automatic interrupting device is part of the BES); b) Limits on connected generation: Neither the group of Elements, nor any underlying Elements operated at 100 kV or below, includes more than 75 MVA generation (in aggregate); c) Power flows only into the

group of Elements: The generation within the group of Elements shall not exceed the electric Demand within the group of Elements; d) Not used to transfer bulk power: The group of Elements does not transfer energy originating outside the group of Elements for delivery through the group of Elements; and e) Not part of a Flowgate or transfer path: The group of Elements does not contain a monitored Facility of a permanent flowgate in the Eastern Interconnection, a major transfer path within the Western Interconnection as defined by the Regional Entity, or a comparable monitored Facility in the Quebec Interconnection, and is not a monitored Facility included in an Interconnection Reliability Operating Limit (IROL).
No
The basis for exclusion must be based on system reliability. The need for an interrupting device between the BES and excluded radial Elements is necessary for system reliability independent of ownership of the excluded radial Elements.
Yes
No
The definition should include variable frequency transformers and back-to-back HVdc converters that connect portions of the system operated at 100 kV or higher, regardless of the dc voltage rating of the converter equipment, which often is less than 100 kV. >>>>>>>>>> Assuring reliable operation of nuclear plants requires that Elements subject to Nuclear Plant Interconnection Requirements are planned, designed, maintained, and operated in accordance with NERC Reliability Standards. An additional Inclusion I6 should be added to the definition to include “All transmission Elements subject to Nuclear Plant Interface Requirements (NPIRs) as agreed to by a Nuclear Plant Generator Operator and a Transmission Entity defined in NUC-001.” >>>>>>>>>> Assuring reliable operation of the interconnected transmission network also is dependent on reliable operation of generating units that system operators rely on for capacity and Contingency Reserves. Additional Inclusions I7 and I8 should be added to include: * Real Power resources fully or partially relied on to fulfill a capacity obligation, and * Real Power resources (supply-side or Demand-Side Management) relied on to provide Contingency Reserves to its Balancing Authority.
Individual
Bill Keagle
BGE and on behalf of Constellation NewEnergy, Constellation Commodities Group and Constellation Control and Dispatch
Yes
No comment.
Yes
No comment.
Yes
No comment.
Yes
No comment.
Yes
No comment.
Yes
No comment.
No
BGE generally agrees with the “radial” exclusion, but votes “NO” due to a lack of clarity. The definition does not make it clear if radial facilities operating above 100 kV with automatic interrupting devices (which would otherwise be classified as non-BES under exclusion E1, part a) and serving networks operating below 100 kV are classified as non-BES. We believe E1 should make it clear that such radial facilities are non-BES. BGE would like to note that under the current RFC BES definition, such facilities are not designated as BES. To illustrate and clarify the BGE questions, please see the BGE Diagram attached. The BES designations included on the diagram are BGE’s interpretation of BES facilities

under the proposed definition. Questions regarding the BGE Diagram: 1. If the 13.8 kV device TB is operated “normally closed” as shown, is it the SDT’s understanding that the two 115 kV lines classified as Non-BES in the diagram are no longer considered “radial”? 2. If the SDT does not consider the two 115 kV lines described above as “radial” with device TB closed, would this configuration be excluded as BES under exclusion E3? Or would the Exception Process be required to classify such a configuration as non-BES?
Yes
No comment.
Yes
No comment.
No
An automatic interruption device should be required as in exclusion E1.
No
BGE votes “NO” due to the lack of clarity in exclusion E1.
No
We are not currently aware of any conflict, but have not had a chance to thoroughly consider the potential conflicts.
BGE agrees with the SDT’s position that support equipment such as UVLS and UFLS not be classified as BES. BGE strongly believes that including control centers and other BES support equipment in the BES definition is not necessary and will cause confusion. BGE commends the BES Definition Standards Drafting Team for the informative webinar on 5/19/2011. We were encouraged that the SDT’s developed a transition plan for the implementation of the new BES definition. BGE urges the SDT to also address the issue of the addition of new BES elements (i.e., such as new designated blackstart resources which may include a cranking path that is reclassified as BES). A transition period would also be required for these situations. BGE appreciates the work of the drafting team and supports the goal to produce clear definition language so that upwards of 95% of the assets are clearly distinguished as either included or excluded from the BES. We are particularly sensitive to the potential for burdensome processes (e.g. TFEs) to be added to reliability compliance, so we appeal to the team for continued, vigilant consideration of the arduousness of the BES determination process. Also important to consider is that the subject of this comment form, the proposed BES definition, is only one part of the BES definition project. The accompanying technical principles for BES Exceptions and the Rule of Procedure Process must be evaluated together with the BES Definition to sufficiently understand the revisions. In the end, the Technical Principles and the BES Definition must coalesce and be clearly coordinated and understood. The BES Definition language must include reference to the role of the associated defining documents. One unambiguous document must not be made ambiguous by an associated document or process.
Individual
John Bee
Exelon
Yes
Yes
Yes
Yes
No
Exelon believes that the entire designated cranking path should not be included in the BES definition if there are facilities less than 100kV on the path. Doing so may inappropriately include a number of facilities that are local distribution facilities under jurisdiction of the states, i.e, the inclusion of the entire cranking path occurs without an inquiry as to whether or not the facilities are “facilities used in local distribution of electric energy” even though such facilities are by explicit language in the Federal

Power Act not included in the definition of Bulk Power System. In Orders 743 and 743-A, FERC reiterated several times that “facilities that are determined to be local distribution will be excluded from the bulk electric system.” (Order No. 743-A, P.22). Furthermore, by including these facilities the Drafting Team has gone beyond the boundaries of Section 215 of the Federal Power Act and Orders 743 and 743-A. It should be noted that there is no reference to black start Cranking Paths in either Order. Practically, it is unclear that including lower voltage facilities on a Cranking Path will have any positive impact on reliability without potential entity registration changes or NERC Reliability Standards changes. For example, NERC Reliability Standards FAC-008 and FAC-009 do not currently apply to Distribution Providers.
Yes
Exelon agrees with this inclusion as long as it’s clear that distribution voltage collector systems are not to be included in the BES. Exelon suggests that a clarifying statement be added to the inclusion item, such as “Collector system facilities that are <100kV are excluded from the BES.”
No
Exelon points out that this is another case where facilities used in local distribution of electric energy that are presently under state jurisdiction might be included in the BES. Depending on the location of the automatic interrupting device, the radial facilities in between the tap point at the transmission sources and the interrupting device would be included in the BES.
Yes
Exelon agrees with this Exclusion since this language is quoted from the Statement of Compliance Registry Criteria.
No
Exelon has issues with the ambiguity of this Exclusion item. It seems that Local Distribution Networks will all need to be approved via the Rules of Procedure Exception Process because the characteristics of each LDN as described are not bright line. For example, does (b) refer to any generation, including behind-the-meter generation? Does (c) mean always, i.e., generation can never exceed the load under any condition? In theory or in actuality? How does (d) deal with parallel flows under abnormal conditions when some energy may go in and out? Exelon understands the concept that an LDN primarily serves load, but how will the owners prove that there is no impact to the BES under contingency configurations?
Exelon is abstaining from voting on this item. How would this exclusion be different from E1? Furthermore, Exelon suggests that a definition of “Small Utility” would need to be developed.
No
As highlighted in the answers to Questions 5 and 7, Exelon does not believe that facilities used in local distribution of electric energy have been fully excluded in the draft BES definition. For example, there are many examples of black start cranking path facilities that are <100kV and that are currently defined as facilities used in the “local distribution of electric energy”.
Yes
To the extent facilities used in local distribution of electric energy may be included in the definition of BES, the proposed definition is in conflict with the Federal Power Act.
The definition assumes some inclusions or exclusions based on levels of generation used in the NERC Compliance Registry Criteria. Exelon does not view Orders 743 and 743-A as requiring a view or justification of these thresholds. See Order No. 743-A at P 47 (“it was not our intent to disrupt the NERC Rules of Procedure or the Statement of Compliance Registry Criteria”).
Individual
David C. Kahly
Kootenai Electric Cooperative
No
As a general matter, Kootenai supports the approach the Standards Development Team (“SDT”) has taken to defining the Bulk Electric System (“BES”). The changes made in the revised core definition are helpful and represent significant progress toward an acceptable definition. With an effective and efficient exclusion process, the draft will better define the BES as a whole. We urge the SDT to bear in mind the restrictions contained in Section 215 of the Federal Power Act (“FPA”) The “bulk-power system” (As per FERC, we treat the statutory term “bulk-power system” as equivalent to the term

ordinarily used in the industry, “Bulk Electric System”) definition imposes a clear limit on the reach of the mandatory reliability regime. The BES is made up of only those “facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)” and “electric energy from generation facilities needed to maintain transmission system reliability.” Congress reinforced that limit in Section 215(i), where it emphasized that the FPA authorizes the imposition of reliability standards “for only the bulk-power system.” Kootenai is concerned that the SDT’s proposed definition is overly-broad, and that it will sweep in many Elements that have little or no material impact on the reliable operation of the interconnected bulk transmission grid. For example, the definition uses the 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators. Accordingly, for the BES definition to conform to the requirements of the statute, the SDT must adopt an effective mechanism to exempt facilities like these that are improperly swept in by the SDT’s brightline approach to inclusions and exclusions. For this reason, the Exception process to accompany the SDT’s definition is of critical concern. If the SDT incorporates this statutory language as its core definition, it will have addressed FERC’s primary concern with a minimum of disruption to the current NERC system of definitions. The definition could then be further elaborated to show specific points of demarcation for each inclusion and exclusion similar to that Proposal 6 from the WECC Bulk Electric System Definition Task Force (“BESDTF”) team to further delineate BES and non-BES facilities.

No

In concept, Kootenai supports the SDT’s attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. In this regard, we note that the WECC Bulk Electric System Definition Task Force (“BESDTF”) has devoted considerable effort to this question and has developed one-line diagrams noting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort. We again urge the SDT to consider further delineation of points of demarcation similar to WECC BESDTF Proposal 6.

No

Kootenai is concerned that I2 inclusion criteria that includes the 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators is over-inclusive. Under FPA Section 215, generation resources are excluded from the “bulk-power system” unless they produce “electric energy” that is “needed to maintain transmission system reliability.” Hence, the inclusion as drafted improperly expands the BES definition to include generators that the statute requires to be excluded. In the same comments, the SDT also states that it has considered “the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable.” Unfortunately, the SDT appears to have concluded that any interconnection facility operating above 100-kV should be classified as BES. The result will be to require Generation Owners to register as Transmission Owners/Operators, as well, producing substantial additional compliance costs for those Generation Owners but resulting in little or no improvement in the reliability of the BES. We recommend that the SDT, like the Project 2010-07 SDT (commonly referred to as the GO/TO Team), give careful consideration to the practical results of its recommendations rather than relying on abstract conclusions about whether a “contiguous” or “non-contiguous” BES is more desirable. We are concerned that the SDT’s pursuit of a “contiguous” BES will result in a substantially over-inclusive BES definition. The “contiguous” BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. NERC’s Standards Drafting Team for Project 2010-07, has already considered this question and, based on an in-depth review of potentially applicable reliability standards, has concluded that generation interconnection facilities, even if operated above 100-kV, need to comply only with a limited set of reliability standards in order to achieve the reliability goals. Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities “are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system.”

Similarly, a “contiguous” BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES “contiguous.” Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES “Transmission” facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained. We believe the exclusion as drafted adequately defines radials.
Yes
Kootenai strongly supports the categorical exclusion of Local Distribution Networks from the BES. In fact, for reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are, of course, probably the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. Kootenai supports the LDN exclusion, but we believe the exclusion should be refined in the following respects: • The SDT’s draft states that: “LDN’s are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load.” (emphasis added) We recommend that the SDT revise the sentence quoted above as follows: “LDN’s are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load and not to accommodate bulk transfers of power across the interconnected bulk system.” By instituting this suggestion, the SDT would emphasize the key difference between an LDN, which is designed to reliably serve local, end-use retail customers, and the BES, which is designed to accommodate bulk transfer of power at wholesale over long distances.
Yes
Kootenai supports the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that can ill afford the substantial costs that accompany imposition of mandatory compliance with reliability standards. Further, we agree that the small utilities covered by the exemption will have no measurable impact on the operation of the interconnected BES. In the Pacific Northwest, many small entities were required to register by virtue of owning a very small portion of the region’s 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.
No
While Kootenai agrees that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing most local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed at greater length in our answer to Question 1, Kootenai believes that the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES. Kootenai notes that exclusion of facilities from the BES does not mean that owners of those facilities are entirely exempt from reliability standards. On the contrary, the statute provides that “users” of the BES can be subject to reliability regulation. Hence, even where an entity does not own BES assets, it could be required to, for example, provide necessary information to the applicable Reliability Coordinator and to participate in the regional Under-Frequency Load Shedding program by setting the UFLS relays in its Local Distribution Network at the appropriate settings. We note that participants in the WECC BESDTF Task Force generally agreed that appropriate information should be provided by non-BES entities, although there was considerable concern related to ensuring that the provision of information was not unduly burdensome.

Yes
The Exceptions process is a necessary part of making this proposal compliant with the Federal Power Act. As noted in our responses to Question 1 and Question 11, we believe the basic SDT proposal is potentially in conflict with the limitations of the Federal Power Act, and in particular the statutory exclusion for facilities used in the local distribution of electric energy. The SDT's approach can meet the statutory requirements only if the Exception process currently under development results in facilities that are not properly classified as BES being exempted from regulation as BES facilities.
Kootenai has these additional concerns: • We are concerned that the proposed 24-month delay in the effective date of the new definition will delay the potentially beneficial effects of the SDT's efforts, especially for utilities that have been inappropriately registered for BES-related functions, which is a common situation in WECC. We therefore urge the new BES definition to become effective immediately upon approval by FERC or other applicable regulatory agencies. Entities that have been improperly registered for BES functions can then immediately file for deregistration and obtain the benefits of the new definition as soon as possible. For entities that have not previously been registered for BES-related functions but that would be required to register under the new definition, we agree that 24 months is an appropriate transition period to allow the newly-registered entity to attain compliance with newly-applicable reliability standards, many of which require new training for employees, new maintenance procedures, and complex new operational protocols. However, the transition period for newly-registered entities should be structured in a way that does not prevent entities seeking deregistration from benefitting from the new definition at the earliest possible date. • The current definition provides that "Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process." Kootenai is concerned that the SDT carefully delineate which entity has the burden of proof in the exclusion process. The WECC BESDTF approach, which we commend to the SDT, laid out these burdens in some detail. Under that approach, essentially, if a facility is excluded from the BES by virtue of the specific exclusions listed in the definition, the Regional Entity bears the burden of proving that the facility nonetheless has a material impact on the interconnected bulk transmission system and therefore should be included in the BES. On the other hand, if a facility is classified as BES by virtue of the list of inclusions set forth in the BES definition, it can still escape classification as BES, but bears the burden of demonstrating that its facility has no material impact on the interconnected transmission system. We urge the SDT to give careful consideration to these burden-of-proof questions and to follow the lead of the WECC BES Task Force. • For the reasons we have explained in our answer to Question 11, we believe the Exception process is critical both to ensure that the BES definition is effective in producing measurable gains to bulk system reliability and to ensuring that the definition will comply with the limitations Congress placed in Section 215. Hence, we believe the entire BES definition, including the Exception process and related procedures, should be vetted through the NERC Standards Development Process, including the full comment periods and a ballot approvals provided for in that process. We are concerned that important elements of the BES definition have been assigned to the Rules of Procedure Team, and that changes in the Rules of Procedure are subject to approval in a process that provides considerably less due process and industry input than the Standards Development Process. Accordingly, we urge that all elements of the BES definition, including those elements that have been assigned to the Rules of Procedure Team, be vetted through the Standards Development Process.
Individual
Tracy Richardson
Springfield Utility Board
No
SUB appreciates the effort put forward in this process and is indicating "no" primarily because Springfield Utility Board (SUB) has observed that the statutory term "Bulk Power System" is being applied in some cases as being equivalent and interchangeable with "Bulk Electric System". SUB is concerned that the SDT's proposed BES definition is broad and that it will sweep in many elements that have little or no material impact on the reliable operation of the interconnected bulk transmission grid. Springfield Utility Board requests that NERC create a distinction between the terms BPS and BES. Are the two to be used interchangeably, or will BPS no longer be used? SUB suggests NERC consider adopting the statutory definition of the Bulk Power System as the core definition of the Bulk Electric System.
Yes

In concept, SUB supports an attempt to provide a clear demarcation between BES and non-BES elements. The WECC Bulk Electric System Definition Task Force (BESDTF) has devoted considerable effort to this question and has developed one-line diagrams which note the BES demarcation point for a number of different kinds of elements that are common in the Western Interconnection.
No
SUB raises the questions “Are multiple individual units considered one unit if they have a shared bus?” SUB is concerned that in the instance where individual units have a shared bus that some interpretations would be that these are individual and therefore not part of the BES while other interpretations would result in the units being considered part of the BES because of a shared bus. Given I3, SUB suggests that units connected to a shared bus be considered as if they were not connected to a shared bus if they are individually separable by automatic fault-interrupting devices (e.g. two 15aMW units that have a shared bus would not be included as part of I2 if they each have automatic fault-interrupting devices). Continuing the example of the two 15aMW units, if a shared bus somehow combined the two individual units into one unit for purposes of I2, where does this distinction end? What if they share the same transmission line? Is this transmission line considered being a “bus” for purposes of combining the two units into one individual unit? Because this discussion could go on with multiple examples, SUB suggests that the distinction be the automatic fault-interrupting device. If the devices can be separated from each other and the local network then they should be considered individual. While Springfield Utility Board does not own any generating units, we do recognize the importance of the stability and restoration of the Grid, and the generation necessary for the Grid.
No
While Springfield Utility Board does not own any generating units, we do recognize the importance of the restoration of the Grid, and the generation necessary for the Grid. SUB would recommend that NERC clearly define “location” and “single site”. Does single site mean interstate service area location (adding up generation over multiple geographically separate areas), same City?, same common bus?, etc… SUB suggests that for purposes of I3 (and other inclusions and exclusions that reference “same site”, “same location”, or similar language) that the term “collectively share a common bus” be used.
Yes
While Springfield Utility Board does not own any Blackstart Resources, we do recognize the importance of the restoration of the Grid, and the generation necessary for the Grid should have identified paths that are critical, regardless of voltage level.
No
What is a collector system? Does this include a Local Distribution Network? A Local Distribution Network (E3) may have multiple generating units within its service area that serve all or part of retail load (E2). Would the aggregate nameplate rating of these units be included even though they would otherwise be excluded by application of E2? For example, there may be multiple end users with 500 kW photovoltaic systems whose total nameplate capacity is 100 MVA. All or most of the power used is consumed by the retail consumers. SUB suggests that the language be restated to say “Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) that are not excluded under E2 utilizing a collector system through a common point of interconnection to a system Element at a voltage of 100 kV or above” Or “Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a cCollector sSystem through a common point of interconnection to a system Element at a voltage of 100 kV or above. For purposes of this inclusion, a Collector System is any infrastructure not connected to load – where parasitic load associated with a generation unit or units is not considered load.” While Springfield Utility Board does not own any power producing resources, we do recognize the importance of the restoration of the Grid, and the generation necessary for the Grid, regardless of voltage level.
No
SUB agrees with the exclusion for radial systems, but would like clarification regarding the definition of “radial”. SUB appreciates NERC developing a more clear and consistent definition of “radial”. For clarity, SUB suggests the following language: “• Exclusion E1 – Any radial system which is described as connected from a single Transmission source originating with an automatic interruption device and that is characterized by any of the following: a)Only serving Load. A normally open switching device between radial systems with the same or different transmission sources may operate in a ‘make-

before-break' fashion to allow for reliable system reconfiguration to maintain continuity of electrical service. Systems with a normally open switching device(s) that would otherwise result in a system with more than one transmission source if the switching device(s) is closed are considered radial systems. Or, b)Only including generation resources not identified in Inclusions I2, I3, I4 and I5. Or, c)Is a combination of items (a.) and (b.) where the radial system serves Load and includes generation resources not identified in Inclusions I2, I3, I4 and I5?" As a side note, some in the industry appear to place a demarcation based on whether there is a fuse separating two systems. SUB is concerned with interpretations that indicate that if there is a fuse, they are separate. This could result in "closed" systems being considered "open" because there are fuses installed within the network. For example, consider a 115 kV interconnection point stepped down to distribution level service with a fuse continues along the distribution network to another fuse that is interconnected to a 115kV system with another transmission source. Is this fused system closed or open? Is this an intended outcome? SUB is hopeful that E1 will provide clarity to this issue.

No

The proposed language for Exclusion E2 refers to the "customer's side of the retail meter". There may be multiple customers with different resources within the geographic area served by a Registered Entity. Because E2 also refers to "net capacity provided to the BES", SUB assumes that E2 is intended to address resources within the Registered Entity that are served to a single customer or multiple customers. A Registered Entity may have Elements that are separate and independent but that are connected to the BES. Individually, these elements may not have resources that serve customer load that meet I2 or I3, but collectively the sum or resources and elements served do meet I2 or I3. SUB believes that the issue of reliability comes down to both resources, load served, and what paths are shared (or not) between resources and loads. SUB suggests that isolated loads and resources that are functionally independent from a Registered Entities overall system do not need to be added together. SUB suggests the following language: "A generating unit or multiple generating units that serve all or part of retail Load with electric energy on the customer's side of the retail meter if: (i) the net capacity along shared Elements provided to the BES does not exceed the criteria identified in Inclusions I2 or I3, and (ii) standby, back-up, and maintenance power services are provided to the generating unit or multiple generating units or to the retail Load pursuant to a binding obligation with a Balancing Authority or another Generator Owner/Generator Operator, or under terms approved by the applicable regulatory authority. For purposes of this exclusion, if a Registered Entity is responsible for elements that serve loads and resources that are separate from other elements that the Registered Entity is responsible for, then each set of loads and resources that are connected to Elements the Registered Entity is responsible for shall be evaluated separately and resources will not be added together. While Springfield Utility Board does not own any generating units, we do recognize the importance of the restoration of the Grid, and the generation necessary for the Grid.

No

SUB agrees with items, a), b), and e) of the characteristics of an LDN. SUB believes that the language regarding c) and d) needs clarification. c) states: "Power flows only into the Local Distribution Network: The generation within the LDN shall not exceed the electric Demand within the LDN." There may be times where a closed system creates a situation where power flows through the system on an unscheduled basis (electron's will follow the path of least resistance). Left as is, there may be a situation where on a planning basis there is no power flowing out of the LDN, but on a real time basis power does flow in and out. "Power flows only into the Local Distribution Network: The sum of all power being delivered into the LDN at the points of measurement is greater than the sum of all the power measured as being delivered out of the LDN at the points of measurement" The generation within the LDN shall not exceed the electric Demand within the LDN." SUB suggests that the generation language should be deleted, but if the language "The generation within the LDN shall not exceed the electric Demand within the LDN." is retained, what does "Demand" mean? The lowest demand? The highest demand? Instantaneous demand? SUB suggests that if some generation language is added that the exclusion read: "Power flows only into the Local Distribution Network: The sum of all power being delivered into the LDN at the points of measurement is greater than the sum of all the power measured as being delivered out of the LDN at the points of measurement The generation within the LDN shall not exceed the maximum electric Demand within the LDN, where the maximum electric Demand is the maximum electric Demand within the LDN as measured for over the prior sixty (60) months." d) states: "Not used to transfer bulk power: The LDN is not used to transfer energy originating outside the LDN for delivery through the LDN". Again, this language needs

clarification. How would an LSE/DP/TO (or other similar entity) know that their system is not being used to transfer bulk power when other parties are scheduling transmission paths via a Balancing Authority or other overarching entity? SUB suggests that the language be clarified to read “Not used to transfer bulk power: The LDN is not used to transfer energy originating outside the LDN for delivery through the LDN. This would be evaluated using scheduled transmission paths and not measured amounts at the point of measurement. It is the responsibility of the Balancing Authority to notify the Registered Entity with an LDN twelve (12) months in advance of when an LDN would be used to schedule the transfer of energy outside the LDN for delivery through the LDN.” Collectively, E3 would read: The LDN is characterized by all of the following: a)Separable by automatic fault interrupting devices: Wherever connected to the BES, the LDN must be connected through automatic fault-interrupting devices; and b)Limits on connected generation: Neither the LDN, nor its underlying Elements (in aggregate), includes more than 75 MVA generation; and c)Power flows only into the Local Distribution Network: The sum of all power being delivered into the LDN at the points of measurement is greater than the sum of all the power measured as being delivered out of the LDN at the points of measurement; and d)Not used to transfer bulk power: The LDN is not used to transfer energy originating outside the LDN for delivery through the LDN. This would be evaluated using scheduled transmission paths and not measured amounts at the point of measurement. It is the responsibility of the Balancing Authority to notify the Registered Entity with an LDN twelve (12) months in advance of when an LDN would be used to schedule the transfer of energy outside the LDN for delivery through the LDN.;and e)Not part of a Flowgate or Transfer Path: The LDN does not contain a monitored Facility of a permanent flowgate in the Eastern Interconnection, a major transfer path within the Western Interconnection as defined by the Regional Entity, or a comparable monitored Facility in the Quebec Interconnection, and is not a monitored Facility included in an Interconnection Reliability Operating Limit (IROL). o Local distribution networks were added to the exclusion list after considerable discussions among the SDT and various registered entities that have configurations meeting these conditions. The SDT believes that any network that simply supports distribution and is providing adequate protection should be excluded from the BES.

Yes

Springfield Utility Board supports the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that cannot afford the substantial costs that accompany imposition of mandatory compliance with Reliability Standards. Further, we agree that the small utilities covered by the exemption will have no measureable impact on the operation of the interconnected BES. In the Pacific Northwest, many small entities were required to register by virtue of owning a very small portion of the region’s 115 kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance, therefore, will have no measurable effect in improving the reliability of the interconnected Grid.

No

While SUB agrees that the approach adopted by the SDT, a core definition, couple with specific inclusions and exclusions, will be effective in removing most local distribution facilities from the BES, it will not remove all such facilities. SUB believes that the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES. SUB notes that exclusion of facilities from the BES does not mean that owners of those facilities are entirely exempt.

Yes

The exceptions process is a necessary part of making this proposal compliant with the Federal Power Act. As noted in responses to Questions 1 and 11, SUB believes the basic SDT proposal is potentially in conflict with the limitations of the Federal Power Act, and in particular the statutory exclusion for facilities used in the local distribution of electric energy. The SDT’s approach can meet the statutory requirements only if the Exception process currently under development results in facilities that are not properly classified as BES being exempted from regulation as BES facilities.

Springfield Utility Board requests that NERC create a distinction between the terms BPS and BES. Are the two to be used interchangeably, or will BPS no longer be used? SUB suggests NERC consider adopting the statutory definition of the Bulk Power System as the core definition of the Bulk Electric System. _____ May 26, 2011 Dear NERC Standards Drafting Team: Thank you for the opportunity to comment on NERC’s proposed Continent-wide Definition of Bulk Electric System. We believe that NERC ‘s proposed Bulk

Electric System definition is proceeding in the right direction, but that more work needs to be done. SUB's specific concerns are as follows: • Bulk Power System (BPS) and Bulk Electric System (BES) - Springfield Utility Board requests that NERC create a distinction between the terms BPS and BES. Are the two to be used interchangeably, or will BPS no longer be used? SUB suggests NERC consider adopting the statutory definition of the Bulk Power System as the core definition of the Bulk Electric System. • Clear definition of Radial – Because there still appears to be inconsistencies in both definition and application, SUB encourages NERC to develop a concise definition of a radial system. For example, if a system is normally operated as radial, but could be operated closed (by manually closing a breaker), would it be considered a radial or close-looped system? If the answer is "that a closed system", is this in all cases, or are there exceptions? • Registration Status – SUB understands that one of the primary values of clearly defining the BES is for registration determinations, as well as determining which of the Standards apply to registered entities. SUB encourages NERC to support the use of the BES definition for entity registration, and to develop the exception procedure for registered entities that do not own or operate any BES Elements. Springfield Utility Board appreciates FERC and NERC's efforts to create a continent-wide definition of Bulk Electric System, and appreciates the opportunity to provide comment. Tracy Richardson Springfield Utility Board SUB requests NERC to consider the situation where an entity has multiple, but separate systems. The entity is required to become a Registered Entity because the sum of their individual systems meets the thresholds, but portions of their physically separated systems taken individually would otherwise not reach the threshold for registration. For example, an entity may be responsible for service over a third party's transmission for distribution service to a single end user with a load less than =<25MW that has a hard tap into the third parties' transmission. Because the load has a hard tap, it is technically served from more than one transmission source. If there are no other loads served along the tap or along the third party's transmission segment, SUB believes that this type of situation warrants exclusion from the BES as it would otherwise be excluded – except for the fact that the combination of that service and other separate systems that the entity is responsible for triggers registration. SUB is concerned that devices such as shunt capacitor banks may be overlooked. For example, is a radial system serving only load with a shunt capacitor bank included or excluded from BES? It does raise the issue "what does "serving only load mean, exactly?" If a capacitor bank is used for purposes of managing reliability within an local network and the local network would otherwise be classified as an LDN, is the local network still classified as an LDN?
Individual
Joe Tarantino
Sacramento Municipal Utility District (SMUD)
Yes
Yes
Sacramento Municipal Utility District (SMUD) agrees with the concept of Inclusion 1. However, to ensure a clarity of the "Bright-Line" criteria, two items for the Drafting Team (DT) to consider are: 1) removal of the phrase other than GSU as it may lead to confusion. The GSUs typically have one winding below 100 kV that disqualify their inclusion. 2) Reference to the transformer terminals each above 100 kV would reduce confusion for single winding transformers and multiple winding transformers.
Yes
SMUD agrees with the concept of Inclusion 2. To ensure the clarity of the "Bright-Line" criteria the GSU when connected to a voltage 100 kV and above as indicated in the proposal should clearly state that the GSU is included as BES.
Yes
SMUD also agrees with the Inclusion 3 concept.
Yes
SMUD agrees with the inclusion of blackstart resources and their cranking paths.
Yes
SMUD agrees with the Inclusion 5 concept. However, there are a few terms that require clarification to support the "Bright-Line" application. It is unclear what is meant to be captured by the term "Dispersed power producing resources". As reflected in the intent statement it would be preferred to

indicate the applicability of the wind and solar resources or the term intermittent in the Inclusion 5 language. The term “collector system through a common point” is rather vague that lends to varied interpretations that perhaps a defined level of MW through a single element bottleneck would help quantify BES impacts. In addition, the BES delineation should be the single “bottleneck” element for aggregate connection of 75 MVA as it is that element's interruption is what would impact the BES. Additional concerns of I-5 suggests that the wind and solar resources would be BES components where their singular contribution has no appreciable impact to the BES. Including the bottleneck option seems to identify an aggregate BES impact for a loss of a 75 MW block that could have an impact on the BES.
Yes
SMUD support with the Exclusion 1 concept. However to maintain the clarity for a “Bright-line” the term “single Transmission source” needs to be expanded as it could be read to be a single line, common bus or a single entity, that will change the meaning of this exclusion.
Yes
Yes
SMUD agrees with the concept for Exclusion 3. However, sub-bullet “C” should address potential for integral values for variations of the load to the connected resource.
Yes
As written, it is unclear how this exclusion differs from the Radial exclusion. Furthermore, “small utility” needs to be defined more clearly. The last sentence appears circular because ownership of a transmission element would draw the owner into registration. Small entities have no measurable impact to the BES and should not be burdened with the exemption process.
Yes
SMUD does agree that the differentiation is established between the transmission & distribution systems. Although there is concern that the general “Bright-line” is not definitive and could afford additional value through incorporating clarifying language.
No
SMUD supports the SDT’s efforts to create an acceptable BES definition directly linked to an exemption process. SMUD would also like to bring to the BES SDT’s attention that the WECC the Bulk Electric System Definition Task Force has constructed the framework on this task that we encourage the SDT to review their work. SMUD would like to thank the BES SDT for consideration of these comments.
Group
NERC Transmission Issues Subcommittee (TIS)
Mark Byrd
No
Although the wording can work as it is, the TIS believes clearer wording would be: “All Transmission Elements operated at 100 kV or higher, Real Power and Reactive Power resources as described below, connected at 100 kV or higher unless such designation is modified by the list shown below.”
No
It is not necessary to exclude generator step-up transformers because a GSU should be considered to be part of the generating Unit. >>>>>>>>>>The reference to two windings is technically incorrect because it would exclude autotransformers which technically only have one winding. It would be better to say that both the high-side and the low side of the transformer connected at 100 kV or higher. >>>>>>>>>>“I1 - Transformers, other than generator step-up (GSU) transformers, including phase angle regulators, with two windings both the high-side and the low side of the transformer connected at 100 kV or higher unless excluded under Exclusions E1 and E3.”
No
It is commonly understood that a generating unit includes the generator itself, and all of the components that connect it to the grid, including the GSU. The specific inclusion of the GSU implies that other components of a generating unit, such as its auxiliary transformers and loads, the

governors, exciters, etc., are not included. >>>>>>>>>>The TIS suggests the following wording: >>>>>>>>>>"I2 - Individual generating units greater than 20 MVA (gross nameplate rating) generator terminals through the GSU which has a high side connected at a voltage of 100 kV or above."
No
The use of the term "common bus" technically has a very specific meaning and would openly exclude most modes of connection. There is no "common bus" in a ring-bus or a breaker-and-one-half configuration. Also, it is not necessary to include the GSU (s), as commented in 3 above. >>>>>>>>>>The TIS suggests using wording similar to that contained in I5: >>>>>>>>>>"I3 - Multiple generating units located at a single site with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) connected through a common bus operated at a common point of interconnection to a system Element at a voltage of 100 kV or above."
The last sub-bullet in E2 is terribly confusing. The TIS does not offer alternate wording because we are unsure of the meaning of the phrase: >>>>>>>>>> "…pursuant to a binding obligation with a Balancing Authority or another Generator Owner/Generator Operator, or under terms approved by the applicable regulatory authority."
The definition should include variable frequency transformers and back-to-back HVdc converters that connect portions of the system operated at 100 kV or higher, regardless of the dc voltage rating of the converter equipment.
Group
Rayburn Country Electric Cooperative, Inc.
Eddy Reece
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
No

Individual
Rick Hansen
City of St. George
Yes
The definition is okay as long as proper inclusions and exclusions are included in the definition.
Yes
No
It is understood that this mirrors the Registry Criteria and this is a simple way to address the issue. The justification states there is no technical rationale to change the 20 MVA threshold, however the technical rationale for the 20 MVA criteria has not been provided to the industry either. Having a 20 MVA unit treated the same and subject to all of the same standard requirements as a unit with several hundred MVA of capacity doesn't make sense either. The requirements for an entity or facility should match the impact of that facility to the system.
No
It is understood that this mirrors the Registry Criteria and this is a simple way to address the issue. The justification states there is no technical rationale to change the 75 MVA threshold, however the technical rationale for the 75 MVA criteria has not been provided either. Having a 75 MVA plant treated the same as a plant with a rating of several hundred or several thousand MVA doesn't make sense either. The requirements for an entity or facility should match the impact of that facility to the system.
Yes
No
See comments to questions 3 & 4 above. The requirements for an entity or facility should match the impact of that facility to the system.
No
Radial systems should be excluded as outlined in E1a; however the generation level requirements of 20 MVA and 75 MVA (I2, I3, & I5) should be revisited. As long as the normal power flow is into the radial system, the amount of generation on a radial segment should not automatically trigger an inclusion to the BES.
Yes
The limits on generation levels need to be revisited, with similar concerns as noted to questions 7 & 9 for exclusions E1 & E3.
No
Local distribution networks should have an exclusion provision. However, the local generation limit of 75 MVA is too restrictive. As long as power flows into a LDN the amount of generation should not trigger a LDN to be included in the BES. E3b should be removed from these exclusion criteria or maybe a reasonable ratio of load level to allowed generation on the LDN.
No
Is the transmission source a single line, a single substation? This needs to be defined. What is a small utility? This needs to be defined. Generation limits should also be revisited, see previous comments.
No
The way the definition is currently written it will include many entities with lines, generation and other facilities whose only purpose is for the local generation and distribution of energy to local customers. The generation restrictions and other language in the proposed definition will add additional registrations (i.e. TO/TOP) to many smaller entities which will have a significant economic impact to those utilities with little or no benefit to the main bulk system. The problems may stem more from the "one size fits all" approach to the standards requirements, with the TO/TOP requirements being the most onerous and difficult to comply with especially for smaller entities. Allowed generation levels and the actual use of the transmission and generation facilities should be considered in what is and is not

included in the BES. As the proposed definition stands now along with the current reliability standards a small utility with a few segments of 115 kV or 138 kV lines and with some generation to serve local load must comply with the same requirements as a very large utility with hundreds of miles of 345 kV or 500 kV lines and 1,000's of MVA of generation. The use of applying small, medium and large criteria to many of the standard requirements, similar to what is being considered for the CIP standards with low, medium and high requirements should be considered.
No
What are proposed transition implementation plans for facilities that will now be included in the definition? The implementation plan indicates 24 months which may or may not be enough depending on the response time to exception process. How will a pending exception action affect compliance requirements and effective dates? It should be at least 24 months after it has been determined that a facility must be included.
Individual
John Brockhan
CenterPoint Energy
No
CenterPoint Energy believes that some radial systems described in Exclusion E1 are similar to the local distribution networks (LDNs) described in Exclusion E3. A radial system may be connected to more than one automatic interrupting device in certain substation designs, such as a ring bus configuration. CenterPoint Energy believes similar wording should be used for Exclusion E1 and Exclusion E3. Utilizing wording from Exclusion E3, CenterPoint Energy recommends changing the beginning of Exclusion E1 to "Any radial system which is described as separable by automatic fault interrupting devices: Wherever connected to the BES, the radial system must be connected through automatic fault-interrupting devices; and:".
CenterPoint Energy appreciates the opportunity to provide comments. In reviewing the draft definition, CenterPoint Energy believes the SDT may have unintentionally expanded the definition of the BES beyond the statutory definition in Section 215. Facilities included in the BES should be those facilities that are necessary for the reliable operation of the BES. Many interconnected facilities operated at 100kV and above, particularly those that are operated between 100kV and 200kV, are interconnected primarily to enhance the service provided to customers, rather than to maintain reliable operation of the BES. In addition; CenterPoint Energy is concerned with the addition of another exception process to the Rules of Procedure (ROP). In orders 743 and 743-A, the Commission allowed the ERO latitude to develop a definition that varied from the Commission's recommendation. CenterPoint Energy supports the inclusion/exclusion approach of the SDT and believes it should be possible to define what constitutes the BES without an exception process. Historically, exception processes within the ROP have been cumbersome, labor intensive, confusing, and require on-going maintenance and quarterly or annual updates. Indeed, in question 10 of this comment form the SDT recognizes the burden of administrating an exception process. While CenterPoint Energy understands the SDT may feel pressure to produce a product quickly, the Company does not believe the expedited nature justifies an inferior product. CenterPoint Energy recommends the SDT continue developing criteria that clearly defines BES facilities based on the Section 215 language. Once that is accomplished, an exception process will not be needed.

Individual
Sunitha Kothapalli
Puget Sound Energy
Yes
E3. Local distribution networks (LDNs): In this exclsion criteria, it was unclear about the size of the LDN that could be excluded from BES. There was a limit on connected generation but not connected load. If there is any mention of total aggregate load served by this LDN then that would clarify the definition better. We would like to suggest using a limit say lesser than or equal to 300 MW of total aggregate load served by LDN could be excluded from BES definition in addition to all the 5 (a-e) characteristics mentioned.
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
As suggested in Q1. If a limit on total aggregate load served by LDN is included, that would improve the clarity of this exclustion.
Yes
No
The language on total aggregate load served by LDN should be added for the exclusion list.
No
Individual
Linda Esparza
Public Utility District No. 1 of Franklin County
No
As a general matter, Franklin PUD supports the approach the Standards Development Team (“SDT”) has taken to defining the Bulk Electric System (“BES”). The changes made in the revised core definition are helpful and represent significant progress toward an acceptable definition. With an effective and efficient exclusion process, the draft will better define the BES as a whole. We urge the SDT to bear in mind the restrictions contained in Section 215 of the Federal Power Act (“FPA”) The “bulk-power system” (As per FERC, we treat the statutory term “bulk-power system” as equivalent to the term ordinarily used in the industry, “Bulk Electric System”) definition imposes a clear limit on the reach of the mandatory reliability regime. The BES is made up of only those “facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)” and “electric energy from generation facilities needed to maintain transmission system reliability.” Congress reinforced that limit in Section 215(i), where it emphasized that the FPA authorizes the imposition of reliability standards “for only the bulk-power system.” Franklin PUD is concerned that the SDT’s proposed definition is overly-broad, and that it will sweep in many Elements

that have little or no material impact on the reliable operation of the interconnected bulk transmission grid. For example, the definition uses the arbitrary 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators. Accordingly, for the BES definition to conform to the requirements of the statute, the SDT must adopt an effective mechanism to exempt facilities like these that are improperly swept in by the SDT's brightline approach to inclusions and exclusions. For this reason, the Exception process to accompany the SDT's definition is of critical concern. If the SDT incorporates this statutory language as its core definition, it will have addressed FERC's primary concern with a minimum of disruption to the current NERC system of definitions. The definition could then be further elaborated to show specific points of demarcation for each inclusion and exclusion similar to that Proposal 6 from the WECC Bulk Electric System Definition Task Force ("BESDTF") team to further delineate BES and non-BES facilities.

No

In concept, we support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. In this regard, we note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams noting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort. Also, the reference to "two windings of 100 kV or higher" may create some confusion because many three-phase transformer banks have 6 or 9 windings, depending on whether the transformer has a tertiary. We suggest clarifying this provision by changing the clause reference two windings to read: "the two highest voltage transformer windings of 100 kV per phase that are connected to the Bulk Electric System." We again urge the SDT to consider further delineation of points of demarcation similar to WECC BESDTF Proposal 6.

No

Franklin PUD is concerned that I2 inclusion criteria that includes the arbitrary 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted improperly expands the BES definition to include generators that the statute requires to be excluded. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Unfortunately, the SDT appears to have concluded that any interconnection facility operating above 100-kV should be classified as BES. The result will be to require Generation Owners to register as Transmission Owners/Operators, as well, producing substantial additional compliance costs for those Generation Owners but resulting in little or no improvement in the reliability of the BES. We recommend that the SDT, like the Project 2010-07 SDT (commonly referred to as the GO/TO Team), give careful consideration to the practical results of its recommendations rather than relying on abstract conclusions about whether a "contiguous" or "non-contiguous" BES is more desirable. We are concerned that the SDT's pursuit of a "contiguous" BES will result in a substantially over-inclusive BES definition. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. NERC's Standards Drafting Team for Project 2010-07, has already considered this question and, based on an in-depth review of potentially applicable reliability standards, has concluded that generation interconnection facilities, even if operated above 100-kV, need to comply only with a limited set of reliability standards in order to achieve the reliability goals. Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with

the UFLS relays, must be classified as BES to make the BES “contiguous.” Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES “Transmission” facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability.
No
Franklin PUD is concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy “needed to maintain transmission system reliability” and are therefore properly included in the BES definition.
Yes
Including “all” blackstart and blackstart cranking paths in the BES may ultimately provide an incentive to the electric industry to reduce the number of resources with blackstart capability. We therefore suggest that essential blackstart resources identified by the Regional Entity should be included in the Bulk Electric System, but non-essential blackstart resources need not be.
No
Franklin PUD agrees that it is important to address wind generation facilities and similar generation facilities in which a large number of generating units, each with a relatively small capacity, are clustered and fed into the grid at a single interconnection point. That being said, Franklin PUD is concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained. We believe the exclusion as drafted adequately defines radials.
No
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold (through reference to Inclusion I2) lacks an adequate technical justification in this context. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit (“standby, back-up, and maintenance power…”) should be eliminated.
Yes
Franklin PUD strongly supports the categorical exclusion of Local Distribution Networks from the BES. In fact, for reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are, of course, probably the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. Franklin PUD supports the LDN exclusion, but we believe the exclusion should be refined in the following respects: The SDT’s draft states that: “LDN’s are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load." We recommend that the SDT revise the sentence quoted above as follows: “LDNs are connected to the Bulk Electric System (BES) at more than one location to improve the level of service to retail customer Load and not to accommodate bulk transfers of power across the interconnected bulk system.” By instituting this suggestion, the SDT would emphasize the key difference between an LDN, which is designed to reliably serve local, end-use retail customers, and the BES, which is designed to accommodate bulk transfer of power at wholesale over long distances.
Yes
Franklin PUD supports the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that can ill afford the substantial costs that accompany imposition of mandatory compliance with reliability standards. Further, we agree that the small utilities covered by the exemption will have no measurable impact on the operation of the interconnected BES. In the Pacific Northwest, many small entities were required to register by virtue

of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

While Franklin PUD agrees that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing most local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed at greater length in our answer to Question 1, Franklin PUD believes that the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES. As discussed in our answer to Question 3, Franklin PUD notes that exclusion of facilities from the BES does not mean that owners of those facilities are entirely exempt from reliability standards. On the contrary, the statute provides that "users" of the BES can be subject to reliability regulation. Hence, even where an entity does not own BES assets, it could be required to, for example, provide necessary information to the applicable Reliability Coordinator and to participate in the regional Under-Frequency Load Shedding program by setting the UFLS relays in its Local Distribution Network at the appropriate settings. We note that participants in the WECC BESDTF Task Force generally agreed that appropriate information should be provided by non-BES entities, although there was considerable concern related to ensuring that the provision of information was not unduly burdensome.

Yes

The Exceptions process is a necessary part of making this proposal complaint with the Federal Power Act. As noted in our responses to Question 1 and Question 11, we believe the basic SDT proposal is potentially in conflict with the limitations of the Federal Power Act, and in particular the statutory exclusion for facilities used in the local distribution of electric energy. The SDT's approach can meet the statutory requirements only if the Exception process currently under development results in facilities that are not properly classified as BES being exempted from regulation as BES facilities.

Franklin PUD has these additional concerns: • The current definition provides that "Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process." Franklin PUD is concerned that the SDT carefully delineate which entity has the burden of proof in the exclusion process. The WECC BESDTF approach, which we commend to the SDT, laid out these burdens in some detail. Under that approach, essentially, if a facility is excluded from the BES by virtue of the specific exclusions listed in the definition, the Regional Entity bears the burden of proving that the facility nonetheless has a material impact on the interconnected bulk transmission system and therefore should be included in the BES. On the other hand, if a facility is classified as BES by virtue of the list of inclusions set forth in the BES definition, it can still escape classification as BES, but bears the burden of demonstrating that its facility has no material impact on the interconnected transmission system. We urge the SDT to give careful consideration to these burden-of-proof questions and to follow the lead of the WECC BES Task Force. • For the reasons we have explained in our answer to Question 11, we believe the Exception process is critical both to ensure that the BES definition is effective in producing measurable gains to bulk system reliability and to ensuring that the definition will comply with the limitations Congress placed in Section 215. Hence, we believe the entire BES definition, including the Exception process and related procedures, should be vetted through the NERC Standards Development Process, including the full comment periods and a ballot approvals provided for in that process. We are concerned that important elements of the BES definition have been assigned to the Rules of Procedure Team, and that changes in the Rules of Procedure are subject to approval in a process that provides considerably less due process and industry input than the Standards Development Process. Accordingly, we urge that all elements of the BES definition, including those elements that have been assigned to the Rules of Procedure Team, be vetted through the Standards Development Process.

Individual

Patrick Farrell

Southern California Edison Company

No

The current approach seems to be based on the assumption that the presence of particular equipment is more important than the manner in which the equipment is used. Before SCE can support the BES

Definition, the definition should be revised to include “All Transmission and Generation Elements and Facilities operated at voltages 100 kV or higher, Real Power resources as described below, and Reactive Power resources connected at 100 kV or higher that operate in parallel with the integrated networked transmission system and are necessary for operating the interconnected transmission network, unless such designation is modified by the list shown below.” This modification will provide the clarification needed to better ascertain what facilities should be identified as part of the BES and lessen the need to trigger the Rules Of Procedure exceptions process. If “Inclusions” and “Exclusions” continue to be a part of the BES definition, they will need additional clarification to ensure the exclusion of radial and distribution facilities which (1) do not have interconnected operations risk and (2) are not used for inter-utility transfers on the BES and, therefore, are not necessary for operating the interconnected transmission network. They also need to be modified to work in tandem with the “Technical Principles for Demonstrating BES Exceptions”, so that these types of facilities don’t continually have to be validated by the ROP exceptions process. Example: The exclusion of facilities which are radial or distribution in nature and that have connecting generation of 20MVA or higher for the purpose of serving local load and that are not used to transfer power between “systems” to the BES should be automatic under the BES Definition.
No
Identifying specific equipment within the “Inclusions” or “Exclusions” component is too prescriptive, and itemizing them in this fashion misses the intent of this endeavor which should be to ultimately ensure the risks to region wide reliability are captured. Therefore, it is SCE’s position that the proposed BES Definition should not single out specific pieces of equipment, and that they should be included or excluded based on the criteria of the definition. To do otherwise could: (i) generate confusion due the many types and variations of equipment, and what should/should not be included In the BES; and (ii) include radial or distribution systems into scope that might not otherwise have been considered, and which pose no regional reliability risk. If the BES Definition continues to reference transformer types, it should clarify what specific attributes qualify for inclusion. This might best reside in companion documentation that would accompany the definition to ensure consistency in application.
No
Inclusions I2, I3, and I5 should either be modified or removed, because as currently written, these three Inclusion criteria force the definition to be arbitrarily demarcated by the size of generators connecting to the system, or the aggregate thereof, rather than focusing on the risk characteristics that should define the BES, as SCE identified in its response to Question No. 1. In the WECC, it can safely be said that the vast majority of 20MVA generators are located in local distribution systems and are used to off-set local load, rather than transfer power to the BES. In SCE’s case, our distribution system has a number of components which are marginally above the 100kV BES threshold, are radial in nature, and were previously exempted from the BES by the WECC. These radial systems have interconnecting generation units larger than 20 MVA and/ or aggregate generation exceeding 75 MVA. In many cases, the generation levels on those radial systems exceed the limits proposed in I2, I3, and I5, but the loading on those same systems is such that generation will rarely exceed the local load. Therefore, there is little to no power flow back to the BES from these radial systems. If the BES definition continues to heavily focus its inclusion criteria on generator/ generation size, SCE feels that the SDT also consider incorporating the concept of “potential exports to the BES” from these generating sources. An example being: “I2 – Individual generating units greater than 20 MVA (gross nameplate rating) including the generator terminals through the GSU which has a high side voltage of 100 kV or above and have no more than 5% net flows into the BES based on the past XXX calendar years.” This “Net Flow” concept would negate the need for Section 1C of the “Technical Principles for Demonstrating BES Exceptions”, or conversely, provide the framework for a more quantifiable criteria in Section 1C.
No
Please refer to SCE’s answer for Question No. 3 above.
Yes
No
Please refer to SCE’s answer for Question No. 3 above. If the SDT goes forward and includes I5 into either the proposed BES definition or the Technical Principles for Demonstrating BES Exceptions, the

following additional clarification should be made: (i) Clarify the terms “Dispersed power producing resources” and “collector system”; (ii) When referencing “collector system,” does it include the lines connecting the generation?; (iii) Why the 75 MVA threshold? This seems to be a somewhat arbitrary number which does not correlate with specific operational risks, operational limits, or network capability. This is highlighted when taking SCE’s system into consideration, as we carry operational spinning reserves that are 10 to 20 times greater than the 75 MVA threshold identified in the proposed BES Definition. If SCE were to lose 75 MVA in an event, there would be no reliability risk or perceptible frequency deviation that would attend the event. The proportionality of risk and benefit does not seem to fit within the application and philosophy behind the mandatory limit. Setting the BES Definition in this manner in order to bring in the smallest utilities is not appropriate for application to the larger utilities.; and (iv) As written, I5 could unintentionally bring into scope sub-trans/distribution systems with enough generation as these radial systems could be categorized as “collector systems”. Specifically, there are radially-connected distribution systems in the Desert Southwest designed to enable the interconnection of multiple renewable resources which could be viewed as grouping this collective generation at the point of interconnection with the transmission system. In many cases, the sum total of this generation could be greater than 75 MVA.

No

SCE cannot support this exclusion as it will only apply if generation on the radial system does not exceed the criteria identified in I2, I3 and I5. SCE has identified its concerns regarding these aforementioned items in its previous responses. If the SDT goes forward with E1 criteria, the criteria should be modified as follows: (i) Delete “originating with an automatic interrupting device.” This statement does not change or describe the flow to or from a radial system; (ii) E1 should be modified to identify that generation interconnected to a radial system should not exceed a measureable threshold of electrical demand on the radial system – an example being “5% occurrence in the past XXX years”. This would negate some of the concerns identified regarding I2, I3 and I5; and (iii) SCE also feels that if the core BES definition is to reference protection devices, it should not identify the particular type of protection device as it did in E1, by specifically calling out “make before break” switching, as there are other types of protection with similar functionality.

No

SCE does not believe that the size of generator should dictate what system facilities, regardless of voltage, will or will not be included in the BES definition. More important, is the issue of whether or not the generation has net flow(s) out to the greater integrated networked transmission system. It is the “generation” and not the “generator” which has impacts on the BES. In addition, it would seem that if these are truly “behind-the-meter”, non-export interconnected generation, then there is no scenario that would result in flow back onto the BES, no matter what the interconnection level. The focus should not be restricted to only “behind-the-meter” generation, but rather on the flow generation from the radial system.

No

SCE is in support of the general LDN premise, but believes that this definition should more closely track the FERC seven-factor test from Order 888. As written, the five factors identified could lead to the reclassification of radial sub-transmission system facilities above 100kV from “distribution facilities” to “network facilities”. For example, interconnection amounts within an LDN may exceed an aggregate level of 75MVA, but will not exceed the load in the LDN. SCE suggests striking characteristics “B” and “D” from Exclusion E3, and allowing characteristic “C” to stand alone as the generation characteristic which would define an LDN. The SDT may want to incorporate the following revision: “LDN’s are connected to the Bulk Electric System (BES) at one or more location solely to improve the level of service to retail customer load.”

No

Small utilities should not be automatically excluded from the BES if the BES Definition continues to focus on the size of interconnecting generators to determine what facilities are included in the BES. Instead, small utilities should be required to justify their exclusion using the exemption procedure and the Technical Principles for Demonstrating BES Exceptions. This would provide the necessary oversight to ensure these smaller systems continued to stay under the thresholds stipulated in the BES definition. In many areas, it is both faster and less expensive for renewable generators to interconnect with these systems, thus potentially allowing for the addition of large amounts of generation totaling more than the draft BES allowances within a relatively short period of time.

No
SCE believes that the BES Definition, as currently proposed, relies too heavily on the characterization of interconnected generation in its “Inclusion” criteria.
Yes
For participants in an ISO/RTO, such as the CAISO, the final BES Definition may change the party who will control system facilities, even if they are distribution or radial in nature, based on the amount or size of interconnected generation. Generally, within the CAISO, facilities that are included in the BES Definition are under CAISO’s direct control, while radial and distribution facilities are not.
As discussed during the May 19, 2011 NERC Webinar, SCE supports having one-line diagrams illustrating examples of the line and bus arrangements as they pertain to the BES Definition included as part of a set of support documents. A good start for these diagrams would be the ones developed by the WECC Bulk Electric System Definition Task Force (WECC BESDTF). These diagrams were developed by WECC to better illustrate the demarcation between BES and non-BES facilities and provide important information and insight into the WECC system.
Individual
Thomas Weller
Midstate Electric Cooperative
No
As a general matter, MSEC supports the approach the Standards Development Team (“SDT”) has taken to defining the Bulk Electric System (“BES”). The changes made in the revised core definition are helpful and represent significant progress toward an acceptable definition. With an effective and efficient exclusion process, the draft will better define the BES as a whole. We urge the SDT to bear in mind the restrictions contained in Section 215 of the Federal Power Act (“FPA”) The “bulk-power system” (As per FERC, we treat the statutory term “bulk-power system” as equivalent to the term ordinarily used in the industry, “Bulk Electric System”) definition imposes a clear limit on the reach of the mandatory reliability regime. The BES is made up of only those “facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)” and “electric energy from generation facilities needed to maintain transmission system reliability.” Congress reinforced that limit in Section 215(i), where it emphasized that the FPA authorizes the imposition of reliability standards “for only the bulk-power system.” MSEC is concerned that the SDT’s proposed definition is overly-broad, and that it will sweep in many Elements that have little or no material impact on the reliable operation of the interconnected bulk transmission grid. For example, the definition uses the arbitrary 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators. Accordingly, for the BES definition to conform to the requirements of the statute, the SDT must adopt an effective mechanism to exempt facilities like these that are improperly swept in by the SDT’s brightline approach to inclusions and exclusions. For this reason, the Exception process to accompany the SDT’s definition is of critical concern. If the SDT incorporates this statutory language as its core definition, it will have addressed FERC’s primary concern with a minimum of disruption to the current NERC system of definitions. The definition could then be further elaborated to show specific points of demarcation for each inclusion and exclusion similar to that Proposal 6 from the WECC Bulk Electric System Definition Task Force (“BESDTF”) team to further delineate BES and non-BES facilities.
No
In concept, we support the SDT’s attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. In this regard, we note that the WECC Bulk Electric System Definition Task Force (“BESDTF”) has devoted considerable effort to this question and has developed one-line diagrams noting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort. Also, the reference to “two windings of 100 kV or higher” may create some confusion because many three-phase transformer banks have 6 or 9 windings, depending on whether the transformer has a tertiary. We suggest clarifying this provision by changing the clause reference two windings to read: “the two highest voltage transformer windings of 100 kV per phase that are connected to the Bulk Electric System.”

We again urge the SDT to consider further delineation of points of demarcation similar to WECC BESDTF Proposal 6.

No

MSEC is concerned that I2 inclusion criteria that includes the arbitrary 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted improperly expands the BES definition to include generators that the statute requires to be excluded. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Unfortunately, the SDT appears to have concluded that any interconnection facility operating above 100-kV should be classified as BES. The result will be to require Generation Owners to register as Transmission Owners/Operators, as well, producing substantial additional compliance costs for those Generation Owners but resulting in little or no improvement in the reliability of the BES. We recommend that the SDT, like the Project 2010-07 SDT (commonly referred to as the GO/TO Team), give careful consideration to the practical results of its recommendations rather than relying on abstract conclusions about whether a "contiguous" or "non-contiguous" BES is more desirable. We are concerned that the SDT's pursuit of a "contiguous" BES will result in a substantially over-inclusive BES definition. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. NERC's Standards Drafting Team for Project 2010-07, has already considered this question and, based on an in-depth review of potentially applicable reliability standards, has concluded that generation interconnection facilities, even if operated above 100-kV, need to comply only with a limited set of reliability standards in order to achieve the reliability goals. Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability.

No

MSEC is concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition.

Yes

Including "all" blackstart and blackstart cranking paths in the BES may ultimately provide an incentive to the electric industry to reduce the number of resources with blackstart capability. We therefore suggest that essential blackstart resources identified by the Regional Entity should be included in the Bulk Electric System, but non-essential blackstart resources need not be.

MSEC agrees that it is important to address wind generation facilities and similar generation facilities in which a large number of generating units, each with a relatively small capacity, are clustered and fed into the grid at a single interconnection point. That being said, MSEC is concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4. This would lump together many IPP's that are spread out over a large distribution network that happen to be tied into a single point of interconnection.

Yes

FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be

retained. We believe the exclusion as drafted adequately defines radials.
No
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold (through reference to Inclusion I2) lacks an adequate technical justification in this context. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit ("standby, back-up, and maintenance power…") should be eliminated.
Yes
MSEC strongly supports the categorical exclusion of Local Distribution Networks from the BES. In fact, for reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are, of course, probably the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. MSEC supports the LDN exclusion, but we believe the exclusion should be refined in the following respects: • The SDT's draft states that: "LDN's are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load." (emphasis added) We recommend that the SDT revise the sentence quoted above as follows: "LDN's are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load and not to accommodate bulk transfers of power across the interconnected bulk system." By instituting this suggestion, the SDT would emphasize the key difference between an LDN, which is designed to reliably serve local, end-use retail customers, and the BES, which is designed to accommodate bulk transfer of power at wholesale over long distances.
Yes
MSEC supports the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that can ill afford the substantial costs that accompany imposition of mandatory compliance with reliability standards. Further, we agree that the small utilities covered by the exemption will have no measurable impact on the operation of the interconnected BES. In the Pacific Northwest, many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.
No
While MSEC agrees that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing most local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed at greater length in our answer to Question 1,MSEC believes that the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES. As discussed in our answer to Question 3, MSEC notes that exclusion of facilities from the BES does not mean that owners of those facilities are entirely exempt from reliability standards. On the contrary, the statute provides that "users" of the BES can be subject to reliability regulation. Hence, even where an entity does not own BES assets, it could be required to, for example, provide necessary information to the applicable Reliability Coordinator and to participate in the regional Under-Frequency Load Shedding program by setting the UFLS relays in its Local Distribution Network at the appropriate settings. We note that participants in the WECC BESDTF Task Force generally agreed that appropriate information should be provided by non-BES entities, although there was considerable concern related to ensuring that the provision of information was not unduly burdensome.
Yes
The Exceptions process is a necessary part of making this proposal complaint with the Federal Power Act. As noted in our responses to Question 1 and Question 11, we believe the basic SDT proposal is potentially in conflict with the limitations of the Federal Power Act, and in particular the statutory exclusion for facilities used in the local distribution of electric energy. The SDT's approach can meet the statutory requirements only if the Exception process currently under development results in

facilities that are not properly classified as BES being exempted from regulation as BES facilities.
Yes MSEC has these additional concerns: • The current definition provides that “Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process.” MSEC is concerned that the SDT carefully delineate which entity has the burden of proof in the exclusion process. The WECC BESDTF approach, which we commend to the SDT, laid out these burdens in some detail. Under that approach, essentially, if a facility is excluded from the BES by virtue of the specific exclusions listed in the definition, the Regional Entity bears the burden of proving that the facility nonetheless has a material impact on the interconnected bulk transmission system and therefore should be included in the BES. On the other hand, if a facility is classified as BES by virtue of the list of inclusions set forth in the BES definition, it can still escape classification as BES, but bears the burden of demonstrating that its facility has no material impact on the interconnected transmission system. We urge the SDT to give careful consideration to these burden-of-proof questions and to follow the lead of the WECC BES Task Force. • For the reasons we have explained in our answer to Question 11, we believe the Exception process is critical both to ensure that the BES definition is effective in producing measurable gains to bulk system reliability and to ensuring that the definition will comply with the limitations Congress placed in Section 215. Hence, we believe the entire BES definition, including the Exception process and related procedures, should be vetted through the NERC Standards Development Process, including the full comment periods and a ballot approvals provided for in that process. We are concerned that important elements of the BES definition have been assigned to the Rules of Procedure Team, and that changes in the Rules of Procedure are subject to approval in a process that provides considerably less due process and industry input than the Standards Development Process. Accordingly, we urge that all elements of the BES definition, including those elements that have been assigned to the Rules of Procedure Team, be vetted through the Standards Development Process. Dear NERC Standards Drafting Team: Enclosed are MSEC’s comments on NERC’s Proposed Continent-wide Definition of Bulk Electric System. We believe that NERC’s proposed Continent-wide Definition of Bulk Electric System is proceeding in the right direction on this important topic but that more work needs to the done. We would like to thank the Standards Drafting Team for their hard work. We support the detailed comments of the Snohomish County Public Utility District and Pacific Northwest Generating Cooperative with regard to the questions posed by the Comment Form for Project 2010-17 Definition of BES. We would like to emphasize these portions of Snohomish’s and PNGC’s comments: • Question 1, both PNGC and Snohomish suggest that NERC start by adopting the statutory definition of the bulk power system as the core definition. We support that approach. That is, “(t) he term ‘Bulk Electric System’ means: (A) Facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and, (B) Electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy”. See 16 U.S.C. § 824o(a)(1).” • Question 7, we support the exclusion for radial lines as drafted. • Question 9, we support the categorical exclusion of Local Distribution Networks from the BES as defined here, but with Snohomish’s clarifications. • Question 10, we support exclusion E4, for small utilities, but we are unclear how small utilities are defined in the exclusion language presented here. • Question 11, we support the approach to exclusion of local distribution facilities discussed in the draft but repeat that more work should be done on the definition so that facilities used in local distribution are not swept up into the BES. The primary value of clearly defining the BES is for registration determinations. We realize that clearly defining the BES also has value in determining which standards apply to registered entities. If a registered entity does not own any Elements of the BES that that registered entity should be able to efficiently and effectively demonstrate an exception. We encourage NERC to support the use of the BES definition for registration-issues and to develop the exception procedure for registered entities that do not own or operate any Elements of the BES.
Individual
Jason Snodgrass
GTC
Yes
Yes

Yes
Yes
Yes
Yes
Yes
Agree, but further clarification requested. E1 reads as if the originating automatic interrupting device is to be excluded with the radial system. Can the drafting team clarify this intent with respect to breakers protecting radial lines versus for example a breaker or circuit switcher protecting an excluded transformer which is not part of the BES? Drawings would be very beneficial here.
Yes
Yes
Yes
No
Since distribution facilities are to be excluded can the drafting team clarify if the automatic interrupting protective device (breaker or circuit switcher) operating at 100kV or above and protecting an excluded transformer (non-BES) should be excluded with the excluded transformer? Perhaps an additional separate exclusion could eliminate any uncertainty.
No
see comments above.
Individual
Diane Barney
New York State Dept of Public Service
No
1) We do not agree with the core definition. The core definition starts with the premise that the definition must be drafted based on a 100 kV brightline designation. FERC's Order 743 and 743-A clearly state that is just one approach and would entertain other approaches that demonstrate the same level of reliable operation and is responsive to FERC's reliable operation concerns. As the EPAct 2005 recognizes, the industry technical expertise is preserved in the NERC and does not reside at FERC. Therefore, FERC's jurisdiction is expressly limited by Section 215 of the Federal Power Act. Moreover, FERC cannot, under the guise of "policy" concerns, exceed the limits of its statutory authority. FERC's orders recognize this, and repeatedly acknowledge that FERC must exclude facilities used in local distribution from the definition of BES. FERC's orders, at most, assert that "some" 115/138 kV facilities are needed to reliably operate the bulk system. FERC has made no showing that all facilities of 100kV or greater are necessary for reliable operation of the grid. Without a record based finding that all such facilities are necessary for reliable operation of the grid, FERC cannot include all such facilities within its definition of BES. FERC has even explicitly acknowledged within a New York transmission tariff rate case that a 115 kV loop around a significant size city should not be included in the transmission account as it existed solely to serve load in that city. Given the technical expertise to devise a definition more refined lies with the industry, FERC wisely deferred to NERC processes the ability to employ a different approach other than a brightline. Therefore, NERC should apply its expertise to fashion a definition of "bulk electric system" that comports with the statutory jurisdictional limitations Congress imposed upon FERC in FPA Section 215. NERC's efforts should be checked at every step that they are not exceeding the originating authority contained in FPA Section 215. Overall, the definition must be guided by, and limited to, the FPA definition of reliable operation which is explicitly defined as limited to protection of the bulk system by "operating the elements of

the bulk-power system … so that instability limits, uncontrolled separation, or cascading failures of such systems will not occur….", and expressly excludes facilities used in local distribution. 2) NERC fails to make any technical demonstration that using the existing definition as a starting point is valid. Moreover, NERC has resisted pursuing alternative avenues. The NPCC study submitted to FERC in the combined NERC-NPCC compliance filing in September 2009, clearly demonstrated the movement from the NPCC regional criteria to a 100 kV brightline provided little, if any, increased levels of reliable operation. Through extrapolation, a study of other areas is likely to indicate that reliable operation levels throughout the rest of the country could be assured by a more refined selection of which facilities under 200 kV should be included as part of the bulk system. Note that FERC did not reject use of material impact assessmensts; they only objected to the fact that the NPCC test did not include some regional interconnection facilities, some nuclear interconnections and a particular load area. NERC's failure to evaluate other approaches than a brightline 100 kV standard is a failure to ensure adequate levels of reliable operation at a sustainable level consistent with provisions of the FPA. All remaining comments on the definition, as presented by NERC, are based on our belief that the proposed definition is overreaching in its basic premise of starting with a brightline 100 kV as its core definition of the bulk system. 3) It is not clear why the core definition has dropped "generation" interconnected at the specified voltage level. The following inclusions/exclusions included generation facilities and it appears inconsistent to not include generation in the core definition.
No
The inclusion of 20 MVA generation seems inconsistent with I3 that sets the aggregate threshold at 75 MVA. It is not rational that a 20 MVA facility could be the cause of instability, uncontrolled separation of the system or cascading events. This inclusion should be dropped.
I3 should be revised to read all generation – individually or aggregate – 75 MVA and above.
No
This inclusion is problematic at a couple levels. First, blackstart resources can be facilities smaller than the previous thresholds located deep within the local distribution system. Second, given you do not know ahead of time how the system might come apart, often there are multiple cranking paths specified. To avoid incurring the costs of upgrading facilities all along multiple paths, there will be an inclination to designate only one path involving the fewest impacted facilities. The result could be reduced reliable operation – not more.
Yes
We agree with exclusion E1. As described, the facilities are clearly local distribution. Requiring a "make-before-break" switching device, between the BES and the excluded radial system, as a condition-precedent for such exclusion is proper. Such switches are necessary to promote reliable operation by enabling removal of radial systems principally serving load for maintenance and other reliable system operations. If the "make-before-break" switching capability is not included as part of the exclusion, the specification would undermine reliable system operation.
Yes
This exclusion is appropriately specified. Behind the meter generation is mainly on the local distribution system and most likely modeled in power flow cases used to study the bulk system as netted against load. For the few sizable behind the meter generation that are: 1) connected at the 100 kV level and above; and, 2) exceed the 75 MVA threshold, if it is believed that these facilities will impact the bulk system they can be petitioned for inclusion under the rules of procedure.
Yes
This exclusion properly recognizes that local distribution facilities can be at any voltage level. It also properly recognizes that reliable service to load often requires parallel circuits. As written, the exclusion respects FERC's concern that major generation facilities should not be part of the LDN, by limiting the exclusion to generation of75 MVA or less, and to only facilities that move energy down to the LDN.
Yes
This exclusion is consistent with E1 and E2. There should not be discrimination against similarly situated loads.
No

See comments under question 1.

Yes

As expressed in comments under question 1, we believe that use of a 100 kV brightline definition is an overreach of authority and that any definition must respect the limitations itemized in FPA 215. The FPA recognizes that only a subset of the electric system facilities have the capacity to impact multi-state portions of the electric system and rise to the level of federal attention. As a practical matter, however, the electric system is a continuous machine and efforts to maintain reliability on both the transmission and local distribution portions of the electric system must be compatible. That is the key role that the regional entities play and that role should be maintained and respected by NERC efforts. The time and effort it takes to draft standards to address issues on the bulk system is directly attributable to the many different options to design and operate transmission facilities, and options to ensure reliability are different for each design and mode of operation. Multiply that a hundred fold to the different approaches there are to design, operate and to ensure reliability on the local distribution system. Attempts at the federal level to design uniform standards to apply at lower and lower levels of the system are doomed to failure given the nuances of each local system. These attempts will only lead to needless complications and the actual undermining of the reliability on the local distribution system. NERC staff comments seeking to sweep into NERC standards behind the meter generation, meters and relays located deep within the distribution system, etc. and then insist that the bulk system be contiguous is a phenomenal overreach and an intrusion on the design and functioning of the distribution system which will a) complicate efforts to maintain a reliable distribution system; and 2) will needlessly incur costs on ratepayers. NERC needs to stay focused on the authorities extended to it in the FPA. Leave it to the regions to interface locally with utilities, state authorities and other stakeholders to shape seamless reliability protocols that will benefit us all. The question asks if there are orders that relate to this effort. In 1997, the New York Public Service Commission held a proceeding Case No. 97-E-0251 that supplemented the FERC Seven Factor Test with three additional factors to be used in New York to distinguish between transmission and local distribution. This order can be found at the following link: http://documents.dps.state.ny.us/public/Common/ViewDoc.aspx?DocRefId={3C7602E0-62E0-4831-82B6-8C34A72934F4}

Group

New York State Reliability Council

Roger Clayton

No

HVDC and VFT technologies are not addressed specifically. Consideration should be given to expanding the core BES definition to clarify that it includes all AC and DC system Element(s).

Yes

No

The use of a 20 MVA threshold based on NERC's Registry Criteria may be administratively convenient but is arbitrary when based upon BES reliability considerations. Suggest use of a 300 MW or other regionally and technically acceptable threshold such as NPCC's A-10 criterion.

No

The use of a 75 MVA threshold based on NERC's Registry Criteria may be administratively convenient but is arbitrary when based upon BES reliability considerations. Suggest use of a 300 MW or other regionally and technically acceptable threshold such as NPCC's A-10 criterion.

Yes

BS facilities and their cranking paths are critical to the maintenance of system reliability under system restoration conditions. However, they are a special case and should not be construed as a precedent for inclusion of all BES contiguous elements.

No

Distributed resources are comprised of multiple small units that cycle on and off depending upon local ambient conditions. They have multiple feeders collecting at the point of interconnection. It is not credible that simultaneous loss of multiple units and/or collector system feeders could occur and they

should be excluded from the BES based upon reliability considerations. It is noted that system Element(s) beyond the point of interconnection are subject to BES inclusion per the core definition.
No
E1 too prescriptive. Suggest developing a general, flexible definition of radial system in NERC Glossary such as "A system connected from a single Transmission source originating with an automatic interruption device".
Yes
Individual
Bob Thomas
Illinois Municipal Electric Agency
Yes
With the following clarifying edits. The BES definition should refer to “non-generator Reactive Power resources,” to clarify that although all generators provide some reactive power, the generators that do not meet the criteria of I2 through I5 are not included in the BES.
Yes
With the following clarifying edits. “Transformers, including phase angle regulators, and not including generator step-up (GSU) transformers, with two windings of 100 kV or higher unless excluded under Exclusion E1 or E3.”
Yes
Please see comments under Question 13.
Yes
Please see comments under Question 13.
Yes
Please see comments under Question 13.
Yes
Please see comments under Question 13.
Yes
With the following clarifying edits. Delete the words “described as” in the first sentence. Also, “a single Transmission source” should be defined to encompass various bus configurations. For example, an individual breaker position in a ring bus is not a single Transmission source, but a bus at one voltage level at one substation should be considered a single Transmission source. Also, the phrase “automatic interrupting device” should be replaced with the phrase “switching device”. The current wording does not take into account that a radial system is often connected to a ring bus or a breaker-and-a-half scheme where the breaker/automatic interrupting device is within the bus arrangement. The appropriate division between BES and non-BES is at the disconnect switch where the radial line attaches to the bus arrangement.
Yes
Please see comments under Question 13.
Yes
With the following clarfying edits. “Local Distribution Networks (LDN): Groups of Elements operated above 100 kV that are primarily intended to distribute power to Load rather than to transfer bulk power across the Interconnected System.” The second sentence should be revised as follows: “LDN’s are connected to the Bulk Electric System (BES) from more than one Transmission source solely to improve the level of service to retail customer Load.”
Yes

With the following clarifying edits. The final sentence should be revised as follows: “For purposes of this exclusion, a ‘small utility’ is an entity that performs a distribution provider or load serving entity function but is not required to register as a Distribution Provider or Load Serving Entity by the ERO.”
Yes
Please see comments under Question 13.
No
Being a Joint Action Agency and Joint Registration Organization representing small municipal utility interests, IMEA appreciates this initiative to better define electric systems that should and should not be considered part of the Bulk Electric System. In addition to those comments provided above, IMEA supports comments addressing other concerns as submitted by the Transmission Access Policy Study Group and the Small Entity Working Group.
Individual
Kim Wissman
Public Utilities Commission of Ohio
No
FERC jurisdiction is limited by the Federal Power Act, Section 215. To make a bright line designation as the starting point, without a demonstration that ALL facilities at 100 kV and greater affect the reliability of the bulk power system is a step beyond FERC jurisdictional boundaries. The Federal Power Act explicitly excludes facilities used in local distribution from the bulk power system. NERC should give serious consideration to other (non bright-line) approaches to ensure bulk system reliability.
No
FERC jurisdiction is limited by the Federal Power Act, Section 215. To make a bright line designation as the starting point, without a demonstration that ALL facilities at 100 kV and greater affect the reliability of the bulk power system is a step beyond FERC jurisdictional boundaries. The Federal Power Act explicitly excludes facilities used in local distribution from the bulk power system. NERC should give serious consideration to other (non bright-line) approaches to ensure bulk system reliability.
No
The inclusion of individual generating units between 20 MVA and 75 MVA nameplate capacity is inappropriate and over-reaching. Inclusion I3 sets the aggregate threshold at 75 MVA for multiple generating units. Technical justification for assuming a 20 MVA generating facility could cause instability, uncontrolled separation, or cascading events on the bulk system appears to be lacking. This appears to simply be based on that fact the NERC used it in a separate framework, which has no basis. Inclusion I2 should be removed. Regarding the contiguous standard - simply because an element is connected to the BES does not make it a part of the BES. By the very nature, a radial or distribution element should pose limited or no impact on the BES. They are easily isolated from the rest of the system. This contiguous measurement could impose standards unnecessarily on systems with no ultimate impact on the bulk system, thereby enabling far-reaching authority into the distribution system.
No
This should be expanded to also refer to individual generation capacity, as well as aggregate, at 75 MVA and above.
No
this should be determined by an impact analysis, not inclusive of all Blackstart Resources, regardless of location on the system.
None
Yes
Exclusion E1 is appropriate. However, any inclusion that are inconsistent with this exclusion should be eliminated. Any facility that has an impact on the bulk system could be considered for inclusion under a case by case basis.
Yes

Exclusion E2 is appropriate. Same as 7.
Yes
Exclusion 3 is appropriate. This reflects the reality that local distribution can be at any level. As a reminder the Commission proposed seven indicators of local distribution to be evaluated on a case-by-case basis: (1) Local distribution facilities are normally in close proximity to retail customers. (2) Local distribution facilities are primarily radial in character. (3) Power flows into local distribution systems; it rarely, if ever, flows out. (4) When power enters a local distribution system, it is not reconsigned or transported on to some other market. (5) Power entering a local distribution system is consumed in a comparatively restricted geographical area. (6) Meters are based at the transmission/local distribution interface to measure flows into the local distribution system. (7) Local distribution systems will be of reduced voltage. This test clearly indicates that not all radial circuit lines are the same. This exclusion would not only appropriately apply the seven factor test, but also comply with the Federal Power Act regarding appropriate authority.
Yes
It appears this could be applied consistently with other exclusions.
No
While it appears there was an attempt to draft the standard to comply with the Federal Power Act, the issues outlined throughout the questions above raise concerns that local distribution could easily get captured in NERC and FERC reliability standards needlessly and inappropriately.
Yes
See concerns above with exceeding authority under the Federal Power Act Section 215. State Utility Commissions are charged with assuring safe, reliable service to their customers. We are in a much better situated position than FERC or NERC to provide any necessary regulation and oversight of the local distribution system.
No
Group
Dominion
Louis Slade
No
Dominion believes the core BES definition should include any non-radial Element or Facility operated at 100 Kv or higher and should exclude any radial Element or Facility (regardless of operating voltage) as well as non-radial Element or Facility operated below 100 kV. The core definition should also include defined criteria that are applied to an Element or Facility to determine whether or not it meets the intent of the Section 215 of Federal Power which defines the bulk power system as (1) facilities and control systems necessary for operating an interconnected electric energy transmission network; and (2) electric energy from generation facilities needed to maintain transmission system reliability. (3) However, Section 215 excludes facilities used in the local distribution of electric energy From the definition of the bulk power system . An Element or Facility should be included where the Element or Facility is necessary for operating an interconnected electric energy transmission network or is needed to maintain transmission system reliability. Likewise an Element or Facility should be excluded where the Element or Facility is not necessary for operating an interconnected electric energy transmission network or is needed to maintain transmission system reliability. Dominion agrees that the BES definition should exclude local distribution facilities under state jurisdiction. In specific instances (including UFLS programs and transmission protection systems that are implemented on distribution elements or radial transmission) local distribution facilities can be included in approved NERC reliability standards following under explicit standards dedicated to their explicit mission without their automatic inclusion in a definition of BES that could infringe on state jurisdiction. Dominion is also concerned at how complicated these lists of inclusions and exclusions has become! Dominion had implemented the 100 kV threshold, as displayed in prior drafts of this bright line test (without all these distractions provided in this BES definition version). With the complexity of inclusion and exclusion criteria now provided in this draft, Dominion is not sure it can replicate the list of facilities that are now qualified for inclusion in the BES as seen through the eyes of different auditors and this will expose Dominion to undesirable disputes down the road on what should have been included or excluded.
No

While Dominion appreciates the SDT's attempt to respond to initial comments, unfortunately the response does not squarely address Dominion's concerns. Rather, the SDT proposes that all transformers, whether for transmission or generation should be included. The SDT's response to SERC also seems to indicate that the facility associated with generators should be included in the BES. In order to provide clarity Dominion restates its comment. Dominion's position is that all transformers with two windings at 100 kV or higher should be included in the BES. Dominion does not agree that a transformer with two windings at 100 kV or higher should be excluded merely because it is a generator step up (GSU). And, while Dominion does not agree that a generation resource, Element or Facility should automatically be classified as part of the BES, if the SDT decides to do so, then it is Dominion's position that the GSU should also be included in the BES. It doesn't seem to make sense to include the generator itself, but exclude an associated element that is operated at 100 kV or above. If the SDT's intent was to 'carve out' GSUs in Inclusion -I1, but to include GSUs in Inclusion I2 and 3, then Dominion suggests revising the phrase "….including the generator terminals through the GSU…." to read "….including the generator terminals and the GSU."

No

As stated in its response to Question 2 above, Dominion disagrees that a generation resource, Element or Facility should automatically be included in the BES. Dominion agrees that the Generator Owner and Generator Operator, as users of the bulk power system, should have to abide by applicable reliability standards, but do not agree that this should automatically require the inclusion of a generation resource, Element or Facility in the BES. Further, Dominion prefers that the SDT use the term "generation resources" as stated in the current BES definition contained in the Glossary of Terms instead of the proposed term "generating unit".

No

As stated in its response to Question 2 above, Dominion disagrees that a generation resource, Element or Facility should automatically be included in the BES. Dominion agrees that the Generator Owner and Generator Operator, as users of the bulk power system, should have to abide by applicable reliability standards, but do not agree that this should automatically require the inclusion of a generation resource, Element or Facility in the BES. Further, Dominion prefers that the SDT use the term "generation resources" as stated in the current BES definition contained in the Glossary of Terms, instead of the proposed term "generation unit"

No

Dominion continues to disagree that a generation resource, Element or Facility should automatically be included in the BES. Dominion agrees that the Generator Owner and Generator Operator, as users of the bulk power system, should have to abide by applicable reliability standards, but do not agree that this should automatically require the inclusion of a generation resource, Element or Facility in the BES.

No

Dominion disagrees that an Element or Facility operated below 100 kV should be included automatically in the BES. Dominion agrees that users of the bulk power system should be required to abide by applicable reliability standards. Dominion questions why the SDT chose to use the phrase 'Dispersed power producing resources' As opposed to the phrase 'Dispersed generating resources'. Dominion asks that the SDT provide an explanation for its choice of phrases.

No

Dominion can agree with Exclusion E1 only if the exclusion is applied to any radial Facility, regardless of whether it is used to connect load or generation to the bulk power system.

Yes

Dominion agrees with Exclusion E2 because we agree that specific criteria can be applied and will indicate the Element or Facility is not necessary for operating an interconnected electric energy transmission network or is needed to maintain transmission system reliability. . However Dominion suggests that the SDT add a defined interval of time for measurement of net capacity so that planners can be assured that the exclusion should really be applied at the location. Dominion suggests use of an hour as the time increment.

No

An Element or Facility should only be excluded where the Element or Facility is not necessary for operating an interconnected electric energy transmission network or is needed to maintain

transmission system reliability.
No
It is Dominion's position that, all things being equal a generator or a load have similar, but typically inverse impacts of the bulk power system. The burden for small entities is similar, whether that entity is a LSE, DP, GO or GOP.
No
Dominion believes the core BES definition should include any non-radial Element or Facility operated at 100 Kv or higher and should exclude any radial Element or Facility (regardless of operating voltage) as well as non-radial Element or Facility operated below 100 kV. The core definition should also include defined criteria that are applied to an Element or Facility to determine whether or not it meets the intent of the Section 215 of Federal Power Act Section 215 defines the bulk power system as (1) facilities and control systems necessary for operating an interconnected electric energy transmission network; and (2) electric energy from generation facilities needed to maintain transmission system reliability. (3) However, Section 215 excludes facilities used in the local distribution of electric energy From the definition of the bulk power system. An Element or Facility should be included where the Element or Facility is necessary for operating an interconnected electric energy transmission network or is needed to maintain transmission system reliability. Likewise an Element or Facility should be excluded where the Element or Facility is not necessary for operating an interconnected electric energy transmission network or is needed to maintain transmission system reliability. Dominion agrees that the BES definition should exclude local distribution facilities under state jurisdiction. In specific instances (including UFLS programs and transmission protection systems that are implemented on distribution elements or radial transmission) local distribution facilities can be included in approved NERC reliability standards following under explicit standards dedicated to their explicit mission without their automatic inclusion in a definition of BES that could infringe on state jurisdiction.
Yes
The inclusion of an element or facility that is not integral to the reliable operation of the integrated bulk power system is in conflict with the intent of Section 215 of the FPA . This is especially true for radial facilities, whether used to connect generators or load to the bulk power system.
Does the SDT assert that there is no reliability gap because the impact of load on the BES is covered because the DP and LSE are registered and therefore must comply with applicable reliability standards? If so, why shouldn't the same apply to generation elements? GO and GOPs, just like DPs and LSEs are registered users of the bulk power system and must adhere to applicable reliability standards. Other comments Dominion also has the following comments which are based, to a large degree upon the webinar of May 19th. Dominion is concerned that while the BES definition is going through the standards development process, where stakeholders have the ability to ballot, the exception process is being treated as a change to the Rules of Procedure, with no associated stakeholder ballot. For this reason, Dominion prefers that the exception criteria itself be part of the BES definition standards development process. As Dominion reviews the Inclusions and Exclusions included by the SDT in the BES definition, we believe that the SDT could just have easily developed criteria to determine whether impact on the BES is material. We believe this would negate the need for the exception process proposed for the Rules of Procedure. However, if this course is not chosen, then Dominion requests the NERC BOT apply these changes in an 'all or none' fashion. That is, the BES definition and the exception process should both require NERC BOT approval or neither should be moved to FERC for its approval. We are confused as to how the definition, in particular the Inclusions and Exclusions, and the exception process are meant to be applied to, or by, the registered entity. We thought we heard differing views from the panel; one stating that, if the Element or Facility met the Inclusion or Exclusion in the BES definition, then an exception request submittal is not required. On the other hand, we thought we heard that, unless an exception request submittal had been approved then 'status quo' applies. What is 'status quo' based on, the current BES definition or the BES definition being proposed? Would an entity need to track the effective date of the BES definition change in order to determine 'status quo'? How will submittal or non-submittal of an exception request by the registered entity be applied for compliance purposes? Dominion believes the correct answer is that and Element or Facility that meets the BES definition is included and if it doesn't meet the BES definition, isn't included. Only when an exception request has been submitted by an entity, approved and any appeal resolved, is inclusion or exclusion based on the impact to the bulk power system as determined by the criteria used in the exception process.

Group
SPP Standards Review Group
Robert Rhodes
No
A reference needs to be made to the ROP changes which also provide a mechanism whereby Elements may be excluded/included in the BES. Without that reference the proposed definition does not completely include all means for exceptions/inclusions. We would suggest the definition be expanded to say '…modified by the list shown below or as provided by Appendix 5C of the NERC Rules of Procedure.'
Yes
No
With the inclusion of a voltage criteria in the definition an inconsistency is created between Elements that are not a part of the BES but are still required to be part of the NERC Compliance Registry. Does this create an issue? Did the SDT intend to create this inconsistency? A large generating unit or group of units that are connected to the interconnection via 69kV does not qualify as a part of the BES. Although the generation level could be substantial, it is still not a part of the BES. If said generation is 20 MVA or 75 MVA, respectively, it would have to be registered in the Compliance Registry. While an entity may be able to petition to include such a facility in the BES, what is the incentive to do so? This seems to detract from the 'bright line' definition.
No
The comment provided for Question 3 above applies here also.
No
While we understand the necessity of including the Cranking Path in the BES, we are equally concerned about the broad usage of the term BES throughout the NERC Reliability Standards and the ramifications of extending the requirements associated with those standards to parts of the distribution system that do not have a logical association with the BES. For example, some of the TPL standards require studies of the BES. Does this then mean those studies would apply to those Cranking Paths on the distribution system? We think Cranking Paths that include portions of the distribution system should be excluded from the BES definition. Could the SDT please provide us with an explanation of why these Elements would be included in the BES and what would be gained if they were included? We'd also like to ask the SDT to identify the standards and requirements that would be applied to the distribution system Cranking Paths. Is there any way that the significance of the distribution Cranking Paths could be maintained without going as far as including them in the BES? Also, if a Distribution Provider has a portion of his distribution system designated an Element of the BES, as in the Cranking Path scenario, does that then require the DP to register as a TO or TOP?
No
Limiting this to 75 MVA does allow the opportunity for a significant amount of generation to 'slip under the fence' regarding inclusion in the BES. Was this the intent of the SDT? For example, in order to circumvent the BES issue a developer may decide to build 2-74 MVA sites rather than a single 148 MVA site. Regarding the similarity of the I3 and I5, what is the difference between a 'single site' and a 'common point of interconnection'? Shouldn't they be the same in the two inclusions?
No
We could concur with this exception providing the 'automatic interruption device' is not considered a part of the BES. Additionally, what are the implications for a radial element connected in a ring bus via two breakers or a radial element connected via a breaker and a half scheme?
No
We think we may concur with E2, but we are uncertain as to what is included in (ii). Could you please clarify?
No
While the principle contained in (c) is valid, the explanation following it is too restrictive. This does not allow the LDN to maintain any excess generation for contingencies and normal load fluctuations. In (b) the implication is that the LDN is being treated like a single site in I3 whereby the total generation capability is restricted to 75 MVA. Is this a valid assumption for municipals? In (e) permanent

flowgates may change from month to month, therefore an LDN could bounce into and back out of the BES depending upon what happens regarding a specific facility which may be included as part of a flowgate. This creates a very fluid situation which can lead to confusion.
No
What's the difference between the proposed E4 and E1(a)? Wouldn't they be the same? Would it be more appropriate to use single point of Transmission interconnection rather than single Transmission source in E1 and E4?
No
The inclusion of Cranking Paths into the BES without regard to voltage level has the potential to pull distribution facilities into the BES. (See Question 5)
Yes
See our responses to Questions 5 and 11 regarding the issue of distribution facilities and Cranking Paths.
No
Group
MRO's NERC Standards Review Forum
Carol Gerou
Yes
Please quantify that Reactive Resources within the BES definition are meant to be generator resources and not static resources.
Yes
Please clarify that an exclusion would be a tertiary winding for example an auto transformer.
Yes
No
The wording "connected through a common bus" is drawn from the NERC Compliance Registry Criteria. NSRF agrees with the language if the intent is to let entities classify the applicable multiple generating units as part of the BES only when it is connected to one (common) bus. However, if the intent is for entities to also classify multiple generation as part of the BES when it is connected through two or more GSUs to different bus sections of a set of (common) buses that are interconnected through bus-tie breakers [which may be done to provide improved reliability and maintenance flexibility], then wording like "connected through a common bus or set of interconnected buses" would be more appropriate. It is the NSRF's understanding that entities do not have to classify applicable multiple generating units as part of the BES when the aggregate MVA is connected to different buses at different voltage levels and no more than 75 MVA is connected to any one bus (or set of interconnected buses) at a single voltage level of 100 kV or more. Is this a correct interpretation?
Yes
It does provide a defense in depth with CIP-002-4.
No
We propose the following questions for your consideration: Which components of the dispersed power resources would be classified as BES? Are the individual small wind generator units and terminals through the GSUs to a higher voltage (e.g. 34.5 kV) collector bus classified as BES Elements? Are the higher voltage bus, the associated elements (e.g. protection system, cap bank, SVC, etc.), and step up transformer to a system Element of 100 kV or above to be classified as BES Elements? With these questions, the NSRF is confused on what the SDT is trying to formulate as an Inclusion. If a dispersed power systems meets the threshold of 75MVA and connected at 100kV or higher, does this make the entire dispersed system considered to be part of the BES? We recommended that one solution is that I5 to be revised as follows "Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a collector system from the point where the aggregated rating exceeds 75 MVA through a common point of interconnection to a system Element at a voltage of 100 kV or above. "
Yes

We recommend the phrase “originating with an automatic interruption device” be clarified as to the location of the interruption device. An entity may not have interruption devices at both ends of a radial fed line. If the interruption device is at the load end of the radial line, then the “up-stream” portion of the radial line is unprotected. Please clarify. Please add the Brightline Criteria that all facilities less than a 100kV are excluded unless those facilities meet the criteria of an Inclusion.
Yes
No
The SDT is defining what a Local Distribution Network is but the term transfer bulk power is ambiguous. Please clarify what the intent of this exclusion is.
Yes
Yes
Yes
Within the Commission’s definition of BPS, it is clearly stated that BPS does not include facilities used in the local distribution of electrical energy.
In order to provide a clear and concise definition, please add the Brightline Criteria that all facilities less than a 100kV are excluded unless those facilities meet the criteria of an Inclusion.
Group
Transmission Access Policy Study Group
Cynthia S. Bogorad
Yes
TAPS appreciates the opportunity to comment on the draft BES definition. We generally support the direction taken by the SDT, with some minor changes. TAPS suggests a few clarifying edits to the core definition. First, the definition should refer to “non-generator Reactive Power resources,” to make clear that although all generators provide some reactive power, those that do not meet the criteria of I2-I5 are not included in the BES. There is ambiguity concerning whether a transformer stepping down from >100 kV to <100 kV is included, though TAPS believes that the SDT intends to exclude such transformers. It is clear that transformers with two windings >100 kV are included and GSUs for registered generators are included, but it is somewhat unclear in the current draft whether a 138 kV to 69 kV transformer is included or excluded. TAPS suggests making it clear that the intent of the SDT is to include (a) GSUs associated with BES generators and (b) transformers with 2 or more windings >100 kV, and that other transformers are excluded. We also believe the drafting team intended to exclude all elements that are not included either under the BES definition and designations or through the exception process. For the sake of clarity, we suggest that a sentence to that effect be added to the core definition. Finally, we note that the definition does not currently refer to the existence of the exception process. We suggest that such a reference be added either to the core definition (as in the revised text suggested by TAPS in this response) or to the lists of Inclusions and Exclusions. The following is the core definition incorporating the changes suggested by TAPS: All Transmission Elements (except transformers) operated at 100 kV or higher, transformers as described below, Real Power resources as described below, and non-generator Reactive Power resources connected at 100 kV or higher, unless such designation is modified by the list shown below. The NERC Rules of Procedure [citation] provide an Exception Process through which Elements not included in the BES under this definition and designations may be included in the BES, and Elements included in the BES under this definition and designations may be excluded from the BES. Elements not included in the BES either by application of this definition and designations, or through the BES exception process, are not BES Elements.
Yes
To minimize possible confusion as to the category of transformers being addressed in I1, and the sufficiency of a single applicable Exclusion, TAPS suggests the following rewording: “Transformers, including phase angle regulators, and not including generator step-up (GSU) transformers, with two windings of 100 kV or higher unless excluded under Exclusion E1 or E3.”
Yes

TAPS understands that the intent is to define the BES component of qualifying generators as that equipment from the generator terminals through the GSU. To convey clearly this point, as well as that only generators that are both over 20 MVA and connected through a GSU with a high side voltage of at least 100 kV are included in the BES, I2 should be reworded as follows: "Individual generating units greater than 20 MVA (gross nameplate rating), connected through a GSU with a high-side voltage of 100 kV or above. A BES generator includes the equipment from the generator terminals through the GSU."
Yes
I3 contains language similar to I2, and should be similarly reworded, as follows: "Multiple generating units located at a single site with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating), connected through a common bus operated at a voltage of 100 kV or above. A BES generating plant includes the equipment from the generator terminals through the respective GSUs."
Yes
TAPS agrees with the concept of Inclusion I5 but suggests a language change to clarify what we understand to be the drafting team's intent, that the inclusion is intended to apply to dispersed wind and solar generating plants, and not, for example, to a radially-connected city with an aggregate of 75 MW of small generators behind-the-meter. This distinction is appropriate because such a city cannot have the same impact on the grid as a 75 MW wind farm; loss of the radial connecting the city to the grid would result in loss of its load as well as its generation, so that the supply-demand mismatch would be far less significant. TAPS thus suggests that I5 be revised to read: I5 Wind farm or solar power installation with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a collector system through a common point of interconnection to a system Element at a voltage of 100 kV or above.
Yes
TAPS suggests some clarifying changes: The words "described as" should be deleted from the exclusion to avoid confusion. What matters is how the system is actually connected, not how someone describes it. In addition, "a single Transmission source" should be defined, and should be generic enough to encompass the various bus configurations. It is not the case, for example, that each individual breaker position in a ring bus is a separate Transmission source; in that case, a bus at one voltage level at one substation should be considered "a single transmission source." Some examples of configurations that should be considered a single transmission source for this purpose are at https://www.frcc.com/Standards/StandardDocs/BES/BESAppendixA_V4_clean.pdf, Examples 1-6. The phrase "automatic interrupting device" should be replaced with the phrase "switching device." Many radials are connected to ring buses or breaker-and-a-half schemes where the breakers (automatic interrupting devices) are within the bus arrangement where the appropriate division between BES and non-BES is at the disconnect switch as the radial "takes off" from the bus arrangement.
Yes
We understand that E2 is intended to apply only to retail customers' generation. The exclusion should therefore be revised to make that limitation clear. Specifically, the first sentence should read: "A generating unit or multiple generating units that serve all or part of retail customer Load with electric energy on the retail customer's side of the retail meter."
Yes
The exclusion refers to groups of Elements that "distribute power to Load rather than transfer bulk power across the interconnected system." The use of the term "bulk power" is vague and could be read incorrectly as a reference to the "bulk-power system," which is defined in the Federal Power Act but is not a NERC defined term. If the LDN is connected to the BES at more than one location, there will by definition be some loop flow. We recommend below that Exclusion 3(d) be revised to quantify the amount of loop flow that is permissible in an excluded LDN. In the context of the first sentence of Exclusion E3, less specificity is needed, and the sentence should only be revised for the sake of accuracy to state: "Groups of Elements operated above 100 kV that are primarily intended to distribute power to load rather than to transfer power across the interconnected System." The exclusion's reference to connection "at more than one location" is vague. The sentence should be revised to read "connected to the Bulk Electric System (BES) from more than one Transmission

source solely to improve the level of service to retail customer Load," and "Transmission source" should have the same meaning that it does in E1. E3(a) should require that there be switching devices between the LDN and the BES, not specifically automatic fault-interrupting devices. The term "separable by" in "Separable by automatic fault interrupting devices" is unclear and should be reworded. E3(b) To avoid pulling an LDN into the BES based on very small customer-owned generation (such as rooftop photovoltaics and hospital backup diesel generators) that the utility does not consider or rely on, or necessarily even know about, the item should be reworded: "Limits on connected generation: Neither the LDN, nor its underlying Elements (in aggregate), includes more than 75 MVA of generation used to meet the resource-adequacy requirements of electric utilities." E3(d) states "Not used to transfer bulk power." As noted above, "bulk power" is a vague term. There will necessarily be some loop flow on a system that is connected to the BES at more than one location. The amount of permissible loop flow for this purpose needs to be determined and stated in this item.

Yes

TAPS supports this exclusion. For the sake of clarity, the final sentence should be revised to read as follows: "For purposes of this exclusion, a "small utility" is an entity that performs a Distribution Provider or Load Serving Entity function but is not required to register as a Distribution Provider or Load Serving Entity by the ERO."

Yes

Individual

Jeff Nelson

Springfield Utility Board

No

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Yes

See SUB's May 26 Comments filed by Tracy Richardson

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Individual
David Angell
Idaho Power
Yes
Yes
I generally agree but the definition accidently excludes autotransformers. It should be restated as transformers with two terminal at or above 100 kV. Also, there should be clarification about any tertiary windings that a transformer might have. I would assume that the tertiary winding and any real or reactive load or generation connected to it to be excluded as the tertiary winding are typically of distribution class voltage. Finally, there is no need to exclude GSUs in this definition because they will be excluded unless the two terminals are at 100 kV or above. Additionally, the GSUs will be covered by other inclusion statements related to generators.
No
Generators at 20 MVA are not material to the BES. I would recommend combining I2, I3, and I5 with the limit at 75 MVA for plant nameplate capability regardless of the number of generators and type of generators.
Yes
Generally agreed but please revise to inlcude I2, I3 and I5 at 75 MVA, see Question 3 and 6 comments.
Yes
Yes
Generally agreed but please revise to one Inclusion for I2, I3 and I5 at 75 MVA, see Question 3 and 4 comments.
Yes
Generally agreed assuming that the make-before-break may be performed manually.
Yes
Yes
No
As written, it is unclear how this exclusion differs from the Radial exclusion. The term “single Transmission source” needs to be clarified – it could be read to be a single line or a single entity, which would change the meaning of this exclusion. It is also improper to include registration criteria in a definition. Furthermore, “small utility” needs to be defined more clearly. The last sentence appears circular because ownership of a transmission element would draw the owner into registration.
Yes
No
Group
New York Power Authority
Randy D. Crissman
Yes

The New York Power Authority (NYPA) supports the Standards Drafting Team's development of a revised Bulk Electric System (BES) definition in response to FERC Order 743 that is directly linked to an exception process for inclusions and exclusions. The definition must be closely coupled to the exception process and the two must be integrated in the standard that is ultimately adopted. This will ensure that the regulatory requirements apply to only those facilities that materially affect the reliability of the BES. In general, NYPA agrees with the proposed definition and the objectives the Standards Drafting Team has established. NYPA recommends that the team make additional clarifications to provide industry with a better understanding of the inclusions and exclusions, as well as the impact of the inclusions/exclusions on the BES. The definition should exclude generator leads for generating units that do not materially affect the reliability of the BES regardless of the BES designation of the generating unit. In addition, the definition should not require the inclusion of contiguous elements. Generating units that are designated BES are currently required to comply with a subset of NERC Reliability Standards, but may not be material to the reliable operation of the interconnected BES. This portion of the definition should not require that both BES and non-BES generating units have their generator leads defined as BES transmission elements. A length-based criterion for generator leads ought to be considered. For example, the definition should exclude generator leads that are one mile or less between BES elements. The Standards Drafting Team should engage and coordinate with the Standards Drafting Team for Project 2010-07 (the GO/TO task force). This coordination is needed to determine the impacts of the new BES definition on Transmission Owner (TO) and Transmission Operator (TOP) registration. In addition, NYPA recommends that the Standards Drafting Team and the GO/TO Task Force consider, if they have not already done so, the impacts of ownership and operating agreements on registration. For example, clarification of registration impacts for BES elements that are jointly owned by two utilities (e. g. where one utility owns 5 of 20 towers and the other utility owns the remaining towers and the conductor of a transmission line) is required. The definition does not provide clarity on the state of the system conditions (normal or emergency) that should be applied. The definition should apply to only normal operating conditions.
Yes
Yes
The definition should exclude generator leads for generating units that do not materially affect the reliability of the BES regardless of the BES designation of the generating unit. In addition, the definition should not require the inclusion of contiguous elements. Generating units that are designated BES are currently required to comply with a subset of NERC Reliability Standards, but may not be material to the reliable operation of the interconnected BES. This portion of the definition should not require that both BES and non-BES generating units have their generator leads defined as BES transmission elements. A length-based criterion for generator leads ought to be considered. For example, the definition should exclude generator leads that are one mile or less between BES elements. This comment has been raised in Question number 1 as well.
Yes
No
The Standards Drafting Team needs to clarify whether this inclusion is intended to apply to local transmission operator restoration plans or only to the Balancing Authority's restoration plans. This inclusion should be stated as follows: Blackstart Resources and the designated cranking paths identified in the Balancing Authority's Restoration Plan regardless of voltage." Local restoration plans may not be material to the restoration and operation of the BES, but black start resources for the Balancing Authority's restoration plan are material to the reliable restoration of the BES.
Yes
This inclusion should be specific to the type of generation that the team envisioned it to capture (e.g. wind and solar). Since the term "dispersed power producing resources" can be interpreted to include generation resources from a few KW up to 50 MW, this inclusion can be misinterpreted to include "peaker GT's", fuel cells and microturbines, etc.
No
The definition of Exclusion E1 does not cover radial systems that are connected to a single transmission source by more than one automatic interruption device, such as occurs with a "breaker-

and-a-half" arrangement. The definition should be modified as follows: "Any radial system which is described as connected from a single Transmission source originating with one or more automatic interruption devices and: …." This exclusion uses many terms that are not defined under NERC's standard definitions: "radial load", "automatic interruption device" and "make–before-break". If these terms are used to define an exclusion and can be understood or interpreted differently by different people, then the terms should be formally defined.
Yes
Yes
Yes
Yes
No
General comments are listed under Question 1.
Group
SERC Planning Standards Subcommittee
Charles W. Long
Yes
Yes
Yes
Yes
Yes
Yes
Yes
No
While we agree with the first part of E2, but we do not see the rationale for section (ii) and suggest it be deleted.
No
This seems to be covered by E1.
Yes
No
The comments expressed herein represent a consensus of the views of the above-named members of the SERC EC Planning Standards Subcommittee only and should not be construed as the position of SERC Reliability Corporation, its board, or its officers.
Individual
Robert Ganley
Long Island Power Authority

Yes
Yes
For clarification it is recommended that “windings” be replaced with “connection points”.
Yes
Yes
We recommend clarifying that I3 only covers units under 20 MVA and that the aggregation similarly just applies to those units that are under 20MVA. Example: a 100 MVA generating unit and a 15 MVA generating unit at a single site only the 100 MVA generating unit would be BES per Inclusion I2 but Inclusion I3 would not apply.
Yes
Need to define Cranking Paths.
Yes
Yes
For clarification purposes, we understand “Transmission source” to be a substation and not a line. A substation connected to only one other substation “source” by two lines would still be considered radial and thus excluded.
Yes
No
Revise last two sentences in the introductory paragraph to read as follows: “LDN’s are connected to the bulk electric system (BES) at several points and are characterized by all of the following:”; This removes ambiguity that exists in the deleted portion of the text. See also response to question 11 regarding Exclusion E3-b.
Yes
No
We don’t believe the bright-line definition and specific inclusions and exclusions prevents distribution from being considered as BES. It seems like the intent to exclude non bulk distribution systems would still be included because of E3b. We don’t believe that the SDT has fully excluded local distribution facilities as required by the FERC Order. Specifically E3b should be eliminated. The other remaining items a,c,d,e adequately define the LDN.
No
The SDT should clarify that Local Distribution Networks, including any facilities that are within the LDN, are not subject to Reliability Standard Requirements pursuant to Section 215 of the Federal Power Act.
Group
Michigan Public Service Commission(MPSC)
Don Mazuchowski
No
MPSC Staff Comments: The BES definition proposed by the SDT should not use the term “transmission”, if that term is defined as facilities that are at 100 kV or above. Not all facilities at 100 kV or above are properly considered transmission facilities. Use of “transmission” is causing unnecessary uncertainty and much debate among NERC stakeholders in the standards development and outreach processes over potential effects on jurisdiction, ownership, and possible new NERC registration requirements. This is especially true in states such as Michigan where Michigan Public Service Commission-regulated utilities sold their transmission facilities to independent transmission companies. Using FERC’s Order 888 seven-factor technical-functional test as the basis for technical studies presented and evaluated in individual state dockets, the Michigan Public Service Commission

approved, and subsequently FERC deferred to, those transmission and distribution classifications. Using “transmission” in the BES definition could cause unintended consequences. Entities already registered with NERC as Distribution Providers, Load Serving Entities, or Generation Owners, etc. which own facilities previously classified as distribution by state regulatory agencies, may also now be required to register with NERC as Transmission Planners, Owners, or Operators. A system element defined as BES should not determine jurisdiction, ownership, or require duplicative or additional NERC registration. Much compliance with reliability standards is already being done by RTOs and entities already registered with NERC. Unnecessary and costly duplication of standards work should be avoided. We support that “All Transmission Elements …” be replaced with “All network System Elements …” in the BES definition.
No
MPSC Staff Comments: This inclusion should be eliminated entirely for the reasons provided in E1 above. If the BES is required to be contiguous, this I2 threshold will result in many radial subtransmission lines losing their non-BES status and having to comply with NERC security and reliability requirements. Two different generation thresholds, one for I2 and one for I3, should not be used. The I3 inclusion (75MVA) threshold should be sufficient.
MPSC Staff Comments: The MPSC supports this exclusion with the exception that Inclusion I2 should be removed from the E1(c) provision. Keeping the I2 here will result in too many subtransmission load-serving elements losing their non-BES status.
Yes
Yes
MPSC Staff Comments: The MPSC strongly supports this exclusion because it should exclude a large number of subtransmission facilities that are used for the distribution of local load. Also, this exclusion together with E1 parallels the seven-factor technical-functional test for classifying transmission and distribution. The problem with the seven-factor test is that it does not provide an on-going clear bright line for BES determination. For example, an engineer cannot apply the seven-factor test using a one-line diagram of an electric power network and determine - without supplemental evidence - that an element is classified as distribution or not.
No
MPSC Staff Comments: The BES definition proposed by the SDT should not use the term “transmission”. BES should not equal transmission. A system element defined as BES should not determine jurisdiction, ownership, or require duplicative NERC registration.
No
MPSC Staff Comments: The intent of the updated BES definition should be to classify facilities required to meet mandatory NERC reliability standards. Unnecessary and costly duplication of standards work should be avoided.
Yes
MPSC Staff Comments: The proposed BES definition creates friction with Order 888’s seven-factor technical-functional test as implemented by state regulatory agencies. The resulting inconsistent treatment is likely to result in challenges by entities with FERC-defined distribution assets being now considered as transmission assets as inconsistent with the FPA. FERC’s Order 888 discusses the two components of an unbundled transaction in interstate commerce has “for jurisdictional purposes -- a transmission component and a local distribution component.” p 439 The Order also states that the Commission “will defer to recommendations by state regulatory authorities concerning where to draw the jurisdictional line under FERC’s technical test for local distribution facilities” p 437, also known as the seven-factor technical-functional test. This test was applied by Michigan utilities, filed with the Michigan Public Service Commission in contested case-specific dockets, and after deliberation approved. These state-approved jurisdictional bright-line determinations were subsequently filed with and approved by FERC.

Group
Southern Company
Antonio Grayson
No
Inclusion of individual units less than 75MVA was established when these smaller units were significant to the reliability of the BES and is outdated.
Yes
No
The inclusion criterion I3 and I5 establish the level of generation that has been deemed to be the important threshold for the amount of generation at a facility. The individual generating unit size criteria should match that same aggregate size given in I3 and I5. It doesn't make sense to specify a 20 MVA level for a single unit compared to multiple smaller unit plants whose aggregate totals 75 MVA. To provide equivalent weight to each configuration of plant structure, the individual generating unit size should be 75 MVA rather than 20 MVA. The NERC Registry Criteria should also be changed from 20 MVA to 75 MVA for a single generator size. Further, a significant number of respondents to the first BES definition posting stated that the 20 MVA generator threshold is too low. Many Generator Owners and Operators do not understand the technical basis for including individual generators rated 75 MVA or less. The NERC Registry Criteria alone does not clearly define the technical basis for the 20 MVA threshold, and appears to use this as a conservative generator rating to cover some areas where units this size may have a material impact on the local area reliability. We do not believe this translates to material impact on BES reliability in terms of wide area blackouts and cascading outages. We believe that the technical basis for including any single generator of 75 MVA or less needs to be more clearly concisely established and documented to support Inclusion Criterion I2.
Yes
No
Inclusion I4 should be removed from this definition. There is an existing standard, EOP-005-2 (System Restoration from Blackstart Resources), which specifically addresses Blackstart Resources and the designated Blackstart Cranking Paths "regardless of voltage". Also, use of "regardless of voltage" in Inclusion I4 as part of the BES definition will expand the applicability of some NERC Reliability Standards, which pertains to the BES, to connected facilities at voltage levels below 100Kv.
Yes
Yes
No
Section (i) is confusing because it mixes MW with MVA. The net capacity in section (i) would be in MW while the values referenced in I2 and I3 would be in MVA. This will create confusion. Also, we do not see any need for section (ii). Section (i) is sufficient without section (ii). We recommend Exclusion E2 to be re-written as follows: Exclusion E2 - A generating unit or multiple generating units that serve all or part of retail Load with electric energy on the customer’s side of the retail meter if the net capacity provided to the BES does not exceed 20 MW for a single generating unit or 75 MW for multiple generating units located at a single site.
Yes
No
This seems to be covered by Exclusions E1 and E3.
Yes
No

Group
Luminant Energy
Dennis Hogan
Yes
Yes
Yes
Yes
Yes
Yes
No
E1 a) Omit or clarify-Sentence beginning “A normally open switch…” Does not say what to do with it. Is it included or excluded. Suggested wording would be “An example would be a line with a normally open switching device between radial systems that may operate in a ‘make –before-break’ fashion to allow for reliable system reconfiguration to maintain continuity of electrical service.” E1 b)-Clarify-Sentence beginning “Only including…”Are those resources that are included in the exclusions that are not included in the inclusions? Or are they resources that are included in the inclusions that are not included in the inclusions? This meaning of this sentence is not clear. It should not be necessary to say that resources are excluded that are not included. Suggested wording would be “Generation resources that are not specifically described in the Inclusions I2, I3, I4 and I5.”
Yes
Yes
Yes
Yes
No
Individual
Mike Hirst
Cogentrix Energy, LLC
No
I would like to see a definition for clarity of an "Individual Generating Unit" Example: Solar farm with 300 photovoltaic units. Each is a stand-alone unit with its own inverter, but all come together at a common tie breaker to connect to the BES. Questions: 1. Would each one be considered directly tied to the BES through one common tie breaker? 2. Would each photovoltaic unit be considered an individual generating unit? 3. Would the combined total of 300 units be considered an individual generating unit or would they be considered a facility?
Yes

No
We also strongly suggest the term GSU be defined in the NERC Glossary of Terms to prevent potential compliance re-interpretation of this requirement. A suggested definition is: “Generator Stepup Transformer (GSU) should be defined as a transformer directly connected to a generator on the low side and to a bus on the high side.”
No
GSUs need to be defined – see response to question 3 above
No
The SERC SRG is concerned that this provision may have the effect of incenting transmission operators to limit the available generator options to the minimum necessary for a reliable option as opposed to every possible option that might be utilized in a pinch. We recommend the following adjusted language: “Essential Blackstart Resources and the designated essential blackstart Cranking Paths identified in the Transmission Operator’s restoration plan regardless of voltage”
Yes
No
This exclusion is acceptable if the suggestions in Questions 3 and 4 are incorporated.
No
This exclusion is acceptable if the suggestions in Questions 3 and 4 are incorporated.
No
B)The SERC SDT believes you intended to grant exception E2 in this case; however, it is not explicitly identified. C)Is this intended for each hour of the year or is it possible for some hours that generation may exceed load? This needs to be clarified.
No
We suggest that our comments to Question 3 and Question 4 be incorporated. We also question whether this is going to have an unintended consequence of requiring Distribution Providers to register that otherwise wouldn’t have to register because some technical aspect has not been included in this exception.
Yes
No
No
Individual
Jack Stamper
Clark Public Utilities
No
Clark is concerned that the core definition is overly-broad and sweeps facilities into the BES that are required by the statute to be excluded, even considering the list of inclusions and exclusions. Clark urges the SDT to bear in mind the specific restrictions on the definition of “bulk-power system” contained in Section 215 of the Federal Power Act (“FPA”). In Section 215(a)(1), Congress defined “bulk-power system” to mean “facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)” and “electric energy from generation facilities needed to maintain transmission system reliability.” 16 U.S.C. § 824o(a)(1). Congress unequivocally excluded from this definition “facilities used in the local distribution of electric energy.” The “bulk-power system” definition thus imposes a clear limit on the reach of the mandatory reliability regime. Congress reinforced that limit in Section 215(i), where it emphasized that the FPA authorizes the imposition of reliability standards “for only the bulk-power system.” 16 U.S.C. § 824o(i)(1). Clark believes it is clear that Congress intended the “bulk-power system” to be defined narrowly so that it would incorporate only high-voltage, interstate facilities used to transmit power over long distances, whose failure threatens drastic reliability events such as system instability, uncontrolled separation, or cascading outages. In addition, the Federal Energy Regulatory Commission clearly stated that Order No. 743 did not mandate or direct NERC to adopt a 100 kV

bright-line threshold (Order No. 743-A, 134 FERC ¶ 61,210 at P 20. The Commission goes on to state that the 100 kV bright-line threshold is only one way to address the Commission's concerns. The Commission only requires that NERC use the Commission's recommendation or propose a different solution that is as effective as, or superior to, the Commission's proposed approach. The Commission also acknowledges that Congress has specifically exempted facilities used in the local distribution of electric energy. The definition developed by the SDT should therefore focus on that portion of the interconnected bulk transmission grid for which thermal, voltage, and stability limits must be observed in order to prevent instability, uncontrolled separation, or cascading outages. Further, in order to honor the specific limits placed on the definition by Congress, the SDT's definition must exclude facilities used in the local distribution of electric power and it must exclude facilities whose operation or mis-operation affects only the level of service and does not threaten cascading outages or other widespread events on the bulk interconnected system. Clark asserts that the adoption of a bright-line threshold of 100 kV is arbitrary and not based on any investigation of the potential for facilities at this voltage level to cause instability, uncontrolled separation, or cascading outages or for the general need of these facilities for the operation of an interconnected electric energy transmission network. The threshold excludes transmission facilities below 100 kV without any determination on a general basis of whether these facilities affect interconnected system operation. It goes without saying that these low voltage transmission facilities should be subject to an inclusion process in the event that regional reliability entities believe they do have an impact on reliability but on a case-by-case basis. Clark agrees with this concept and does not believe bringing low voltage transmission facilities into the BES through an inclusion process causes any BES reliability issues. Similarly, Clark believes that the majority of facilities between 100 kV and 200 kV can be shown to have no impacts on interconnected system operation and do not threaten instability, uncontrolled separation, or cascading outages. Clark also points out that the vegetation outage standard (FAC-003) uses this approach. The standard applies to facilities operated at 200 kV or above and "lower voltage lines designated by the RRO as critical to the reliability of the electric system in the region." Clark believes the use of 100 kV as the bright-line threshold will result in a large number of facilities being brought into the definition of the BES that are either 1) part of a Local Distribution Network, 2) are radial serving only load from one transmission source, or 3) that can be shown to have no affect on interconnected system operation or cannot cause instability, uncontrolled separation, or cascading outages. This unnecessary inclusion will cause a large amount of effort on the part of the owners of these facilities and on the part of the Regional Reliability Organizations that will have to review the many exclusion filings that will result. Utilizing a 200 kV threshold with a low voltage inclusion process will eliminate much of the unnecessary paperwork since very few owners of 200 kV or above facilities will seek exclusions. This will free up regional reliability entities to focus on low voltage transmission facilities that truly have an impact on interconnected system operations. Clark believes that the SDT and the NERC should consider adopting a bright-line threshold higher than 100 kV with low voltage inclusion and develop the arguments necessary to demonstrate to the Commission that this solution is as effective as, or superior to, the Commission's proposed approach. These arguments should include the following: • Eventually, a 200 kV bright-line threshold with a low voltage inclusion process will incorporate into the BES the same facilities that a 100 kV bright-line threshold with an exclusion process. This means that these two concepts both have the same effect on the reliability and the operability of the BES. • Utilizing a 200 kV bright-line will reduce the amount of initial effort by transmission owners and Regional Reliability Organizations and allow these entities to concentrate on low voltage facilities that truly have an impact on the BES. Clark is similarly concerned that the SDT's proposed definition is overly-broad in including all generating units greater than 20 MVA capacity connected to transmission at 100 kV or above. Clark believes that there are many small to medium sized generators that individually have no affect on interconnected system operations and do not threaten the BES with instability, uncontrolled separation, or cascading outages. Many of these generators are connected to Local Distribution Networks with minimum loads that exceed maximum generation. While the generators do support system reliability collectively, it is questionable whether many of these generators individually represent a facility necessary for interconnected system operations. The adoption by the SDT of a 200 kV bright-line threshold would eliminate many of these smaller generating units. Again, the RROs must have an inclusion process for smaller generating units it believes support interconnected system operations. Clark believes that eventually both thresholds (with appropriate inclusion and exclusion processes) will result in the same 100 kV to 200 kV connected generators being included in the BES so there will be no difference in the reliability of the BES. Adopting the higher of the two thresholds and adopting a generating capacity threshold higher

than 20 MVA will allow generator owners and Regional Reliability Organizations to devote resources to small generating units that truly have an impact on interconnected system operations.
No
Transformers should only be part of the Bulk Electric System if they are transforming voltage from one BES element to another BES element. The current inclusion language would apply to all transformers with two windings operated at greater the 100 kV subject to the E1 and E3 exclusions. There is no indicated exclusion referring to the exception process. If a facility is excluded from the BES by the exception process, connected transformers should also be excluded. Clark believes if the inclusion language was changed slightly, the exclusion references to E1 and E3 would not be necessary. Without this change, it appears that a transformer with two winding connected to greater than 100 kV would be a BES asset even if both of the facilities these windings were connected to had been excluded (E1 or E3) or excepted (BES Exception Process). I1 should be rewritten to state: Transformers, other than generator step-up (GSU) transformers, including phase angle regulators, with two windings of 100 kV or higher connected to Transmission Elements determined to be part of the Bulk Electric System.
No
Generators should only be part of the Bulk Electric System if they are connected through a GSU to a Transmission Element determined to be part of the BES. The current inclusion language would apply to all generators connected to facilities greater the 100 kV with no exclusion or exception process. Without a change, it appears that a generator connected to a facility greater than 100 kV would be a BES asset even if the transmission assets could be excluded or excepted. I2 should be rewritten to state: Individual generating units greater than 20 MVA (gross nameplate rating) including the generator terminals through the GSU which has a high side winding connected to a Transmission Element determined to be part of the Bulk Electric System. Additionally, as indicated by Clark in its comments on the core definition of the BES, Clark believes the 20 MVA threshold lacks an adequate technical justification and is a purely arbitrary quantity. The use of a capacity threshold in the definition of the BES should have technical reasons.
No
Generators should only be part of the Bulk Electric System if they are connected through a GSU to a Transmission Element determined to be part of the BES. The current inclusion language would apply to all generators connected to facilities greater the 100 kV with no exclusion or exception process. Without a change, it appears that a generator connected to a facility greater than 100 kV would be a BES asset even if the transmission assets could be excluded or excepted. I3 should be rewritten to state: Multiple generating units located at a single site with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) including the generator terminals through the GSUs, connected through a common bus to a Transmission Element determined to be part of the Bulk Electric System. Additionally, as indicated by Clark in its comments on the core definition of the BES, Clark believes the 75 MVA threshold lacks an adequate technical justification and is a purely arbitrary quantity. The use of a capacity threshold in the definition of the BES should have technical reasons.
Yes
No
Generators should only be part of the Bulk Electric System if they are connected through a GSU to a Transmission Element determined to be part of the BES. The current inclusion language would apply to all generators connected to facilities greater the 100 kV with no exclusion or exception process. Without a change, it appears that a generator connected to a facility greater than 100 kV would be a BES asset even if the transmission assets could be excluded or excepted. I5 should be rewritten to state: Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a collector system through a common point of interconnection to a Transmission Element determined to be part of the Bulk Electric System. Additionally, as indicated by Clark in its comments on the core definition of the BES, Clark believes the 75 MVA threshold lacks an adequate technical justification and is a purely arbitrary quantity. The use of a capacity threshold in the definition of the BES should have technical reasons.
Yes

No
As indicated by Clark in its comments on the core definition of the BES, Clark believes the 20 MVA and the 75 MVA thresholds lack adequate technical justification and are a purely arbitrary quantities. The use of a capacity thresholds in the definition of the BES should have technical reasons.
Yes
Clark strongly supports the categorical exclusion of Local Distribution Networks from the BES. Clark also believes that adopting a 200 kV bright-line threshold will result in most, if not all, LDN being exempted from the BES without any need to analyze or self-certify an LDN. This is another case where a higher threshold (with an appropriate inclusion process) will have no affect on BES reliability but will focus resources on investigation low voltage facilities that truly have an impact on interconnected system operations. Clark does recommend a revision to the LDN exclusion language. E3 - Local distribution networks (LDNs): Groups of Elements operated above 100 kV that distribute power to Load rather than transfer bulk power across the interconnected System. LDN's are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load and not to accommodate bulk transfers of power across the interconnected bulk system. The LDN is characterized by all of the following:
No
This proposed exclusion has no affect or benefit. If an entity is not required to register as a DP or LSE why do they then need to be exempted from a standard that does not apply to the entity. The Commission was obviously focusing on a small utility with facilities greater that 100 kV making that entity a Transmission Owner. A 100 kV facility owned by a utility with a small amount of load is either material or immaterial to the reliability of the BES irrespective of the amount of load that entity serves. Therefore the term 'small utility" must refer to some other measure of size. This may be size of load, but also may include circuit miles of transmission greater than 100 kV, capacity of largest line greater than 100 kV line, and possible other measures of "smallness."
Yes
Yes
The BES Definition does not have any reference to the exception process being developed. Both the exclusion and inclusion sections of the BES Definition should have a reference to the process where "BES Definition included" Transmission Elements may be excluded and "BES Definition excluded" Transmission Elements may be included.
The process for identifying facilities as part of an LDN needs to be stated. Clark has heard that this will be through a self-certification process, however, there is no written description how a utility classifies its transmission facilities as an LDN.
Individual
John A. Gray
The Dow Chemical Company
No
See Dow's specific comments on some of the following questions.
No
An additional exclusion for industrial distribution facilities needs to be added for the reasons expressed in Dow's comments on Exclusion E3. Dow's manufacturing sites have transformers, other than generator step up transformers, that have two windings of 100 kV or higher and that are between on-site generation and individual manufacturing plants at such sites. Such transformers should be excluded, because they are part of electricity distribution facilities. However, such transformers do not fall within proposed Exclusion E1 or E3.
No
It should be clarified that if something falls within an Inclusion and an Exclusion, then it is excluded. See ELCON comments.
No
It should be clarified that Exclusion E2 over-rides this Inclusion. See ELCON comments.
Yes

No
The language is not clear enough to understand what is covered.
No
The existing language in the NERC Statement of Compliance Registry for radial exclusions should be maintained since the change proposed by the SDT could result in a significant increase in entities and/or facilities that would have to be registered or included (because of the addition of the automatic interruption device). See ELCON comments for additional details.
No
Clause (ii) should be revised as follows: "(ii) standby, back-up, and maintenance power services are provided to the generating unit or multiple generating units or to the retail Load by a Balancing Authority, or pursuant to a binding obligation with another Generator Owner/Generator Operator, or under terms approved by the applicable regulatory authority."
No
The Dow Chemical Company (“Dow) is an international chemical and plastics manufacturing firm and a leader in science and technology, providing chemical, plastic, and agricultural products and services to many essential consumer markets throughout the world. Dow and certain of its worldwide affiliates and subsidiaries, including Union Carbide Corporation, own and operate electrical facilities at a number of industrial sites within the U.S., principally, in Texas and Louisiana. The electrical facilities at these various industrial sites are configured similarly and perform similar functions. In most cases, a tie line or lines connect the industrial site to the electric transmission grid. Power is delivered from the electric transmission grid to the industrial site through the tie line(s). Lines within the industrial site then deliver power to individual manufacturing plants within the site. Additionally, cogeneration facilities are located at a number of industrial sites owned by Dow and its subsidiaries. These cogeneration facilities generate power that is distributed within the industrial site and used for manufacturing plant operations. In some instances, excess power not required for plant operations is delivered back into the electric transmission grid through the tie line(s) connecting the industrial site to the grid. Under all circumstances, electricity is not flowing into and out of such industrial sites at the same time. While the tie lines and some of the internal lines at these industrial sites operate at 100kV or higher, they do not perform anything that resembles a transmission function. Rather than transmit power long distances from generation to load centers, the tie lines and internal lines perform primarily a local distribution function consisting of the distribution of power brought in from the grid or generated internally to different plants within each industrial site. In some cases, the facilities also perform an interconnection function to the extent they enable power from cogeneration facilities to be delivered into the grid. The voltage of the tie lines and internal lines at these industrial sites is dictated by the load and basic configuration of each site. Higher voltage lines are used when necessary to meet applicable load requirements or to reduce line losses. That does not mean that such lines perform a transmission function. At some sites, Dow is registered as a Generation Owner and Generation Operator. At other sites, the applicable Regional Entity has found that such registration is not required because of the relatively small amount of power supplied to the grid from the applicable cogeneration resources, even though those cogeneration resources have an aggregate capacity greater than 75 MVA (gross aggregate nameplate rating). Tie lines (to the grid) and internal lines at an industrial site that operate at 100kV or higher should be excluded from the BES definition if, due to the relatively small amount of power supplied to the grid from the generation resources at the site, the owner of those generation resources is not required to be registered as a Generation Owner and the operator of those generation resources is not required to be registered as a Generation Operator. At sites where the owner of the generation resources is registered as a Generation Owner and the operator of those generation resources is registered as a Generation Operator, the internal lines (between the generation resources and the manufacturing plants) that operate at 100kV or higher should be excluded from the BES definition, because they are distribution and not transmission facilities. The lines interconnecting the generation resources at such sites to the transmission grid should be included in the BES definition, but the owner and operator of such interconnection lines should not be registered as a Transmission Owner or Transmission Operator. In no instance has a Regional Entity determined that Dow or any subsidiary should be registered as a Transmission Owner or Transmission Operator. Instead, such interconnection lines should be considered as part of the generation resource and Generation Owners and Generation Operators

should be subject to reliability standards specifically developed for such interconnection lines. Dow is strongly opposed to any BES definition that would result in either the tie lines or the internal lines at industrial sites being subject to the mandatory reliability standards applicable to Transmission Owners and Transmission Operators. Complying with reliability standards would cause Dow and its subsidiaries to incur substantial compliance costs and create potential exposure to penalties in the future for noncompliance. Perhaps such costs and exposure could be justified if subjecting these facilities to compliance with reliability standards resulted in a material increase in reliability of the BES, but there is no reason to believe that will be the case. In fact, the opposite might be true. The tie lines and internal lines at industrial sites owned by Dow and its subsidiaries have been operated for decades as distribution and interconnection facilities, and practices and procedures have developed over the years that have enabled such operations to achieve a high degree of reliability for such sites. Requiring these facilities to now operate in a different manner as transmission facilities may well result in a degradation of the reliability of the manufacturing plants located at such sites. For example, outages would have to be coordinated with the RTO, which may not be interested in coordinating such outages with scheduled manufacturing plant outages. Dow recommends that a separate exclusion be added to the BES definition to address industrial distribution facilities. Proposed exclusion E-3 for local distribution networks is not sufficient to ensure that all industrial distribution facilities are excluded. For example, criteria b), entitled “Limits on connected generation” states that “Neither the LDN, nor its underlying Elements (in aggregate), includes more than 75 MVA generation”. This criteria makes no sense for an industrial site with on-site electricity generation and a number of manufacturing plants that has internal power lines and lines interconnecting with the transmission grid that operate at 100 kV or higher where the owner and operator of the on-site electricity generation facilities are not registered as a Generation Owner and a Generation Operator because only a small amount of electricity is ever exported from the on-site electricity generation facilities to the transmission grid. This criteria also makes no sense with respect to internal electric lines (operated at 100 kV or higher) at such industrial sites even where the owner and operator of the on-site electricity generation facilities are registered as a Generation Owner and a Generation Operator. Criteria c) also causes proposed exclusion E-3 not to be sufficient to ensure that all industrial distribution facilities are excluded where the owner and operator of the on-site electricity generation facilities are not registered as a Generation Owner and a Generation Operator because only a small amount of electricity is ever exported from the on-site electricity generation facilities to the transmission grid. Criteria c), entitled “Power flows only into the LDN”, states: “The generation within the LDN shall not exceed the electric Demand within the LDN.” Criteria c) also makes no sense with respect to internal lines at such industrial sites even where the owner and operator of the on-site electricity generation facilities are registered as a Generation Owner and a Generation Operator.

No

If this is adopted, it should apply to industrial sites as well as small utilities.

No

The Dow Chemical Company (“Dow) is an international chemical and plastics manufacturing firm and a leader in science and technology, providing chemical, plastic, and agricultural products and services to many essential consumer markets throughout the world. Dow and certain of its worldwide affiliates and subsidiaries, including Union Carbide Corporation, own and operate electrical facilities at a number of industrial sites within the U.S., principally, in Texas and Louisiana. The electrical facilities at these various industrial sites are configured similarly and perform similar functions. In most cases, a tie line or lines connect the industrial site to the electric transmission grid. Power is delivered from the electric transmission grid to the industrial site through the tie line(s). Lines within the industrial site then deliver power to individual manufacturing plants within the site. Additionally, cogeneration facilities are located at a number of industrial sites owned by Dow and its subsidiaries. These cogeneration facilities generate power that is distributed within the industrial site and used for manufacturing plant operations. In some instances, excess power not required for plant operations is delivered back into the electric transmission grid through the tie line(s) connecting the industrial site to the grid. Under all circumstances, electricity is not flowing into and out of such industrial sites at the same time. While the tie lines and some of the internal lines at these industrial sites operate at 100kV or higher, they do not perform anything that resembles a transmission function. Rather than transmit power long distances from generation to load centers, the tie lines and internal lines perform primarily a local distribution function consisting of the distribution of power brought in from the grid or generated internally to different plants within each industrial site. In some cases, the facilities also

perform an interconnection function to the extent they enable power from cogeneration facilities to be delivered into the grid. The voltage of the tie lines and internal lines at these industrial sites is dictated by the load and basic configuration of each site. Higher voltage lines are used when necessary to meet applicable load requirements or to reduce line losses. That does not mean that such lines perform a transmission function. At some sites, Dow is registered as a Generation Owner and Generation Operator. At other sites, the applicable Regional Entity has found that such registration is not required because of the relatively small amount of power supplied to the grid from the applicable cogeneration resources, even though those cogeneration resources have an aggregate capacity greater than 75 MVA (gross aggregate nameplate rating). Tie lines (to the grid) and internal lines at an industrial site that operate at 100kV or higher should be excluded from the BES definition if, due to the relatively small amount of power supplied to the grid from the generation resources at the site, the owner of those generation resources is not required to be registered as a Generation Owner and the operator of those generation resources is not required to be registered as a Generation Operator. At sites where the owner of the generation resources is registered as a Generation Owner and the operator of those generation resources is registered as a Generation Operator, the internal lines (between the generation resources and the manufacturing plants) that operate at 100kV or higher should be excluded from the BES definition, because they are distribution and not transmission facilities. The lines interconnecting the generation resources at such sites to the transmission grid should be included in the BES definition, but the owner and operator of such interconnection lines should not be registered as a Transmission Owner or Transmission Operator. In no instance has a Regional Entity determined that Dow or any subsidiary should be registered as a Transmission Owner or Transmission Operator. Instead, such interconnection lines should be considered as part of the generation resource and Generation Owners and Generation Operators should be subject to reliability standards specifically developed for such interconnection lines. Dow is strongly opposed to any BES definition that would result in either the tie lines or the internal lines at industrial sites being subject to the mandatory reliability standards applicable to Transmission Owners and Transmission Operators. Complying with reliability standards would cause Dow and its subsidiaries to incur substantial compliance costs and create potential exposure to penalties in the future for noncompliance. Perhaps such costs and exposure could be justified if subjecting these facilities to compliance with reliability standards resulted in a material increase in reliability of the BES, but there is no reason to believe that will be the case. In fact, the opposite might be true. The tie lines and internal lines at industrial sites owned by Dow and its subsidiaries have been operated for decades as distribution and interconnection facilities, and practices and procedures have developed over the years that have enabled such operations to achieve a high degree of reliability for such sites. Requiring these facilities to now operate in a different manner as transmission facilities may well result in a degradation of the reliability of the manufacturing plants located at such sites. For example, outages would have to be coordinated with the RTO, which may not be interested in coordinating such outages with scheduled manufacturing plant outages. Dow recommends that a separate exclusion be added to the BES definition to address industrial distribution facilities. Proposed exclusion E-3 for local distribution networks is not sufficient to ensure that all industrial distribution facilities are excluded. For example, criteria b), entitled “Limits on connected generation” states that “Neither the LDN, nor its underlying Elements (in aggregate), includes more than 75 MVA generation”. This criteria makes no sense for an industrial site with on-site electricity generation and a number of manufacturing plants that has internal power lines and lines interconnecting with the transmission grid that operate at 100 kV or higher where the owner and operator of the on-site electricity generation facilities are not registered as a Generation Owner and a Generation Operator because only a small amount of electricity is ever exported from the on-site electricity generation facilities to the transmission grid. This criteria also makes no sense with respect to internal electric lines (operated at 100 kV or higher) at such industrial sites even where the owner and operator of the on-site electricity generation facilities are registered as a Generation Owner and a Generation Operator. Criteria c) also causes proposed exclusion E-3 not to be sufficient to ensure that all industrial distribution facilities are excluded where the owner and operator of the on-site electricity generation facilities are not registered as a Generation Owner and a Generation Operator because only a small amount of electricity is ever exported from the on-site electricity generation facilities to the transmission grid. Criteria c), entitled “Power flows only into the LDN”, states: “The generation within the LDN shall not exceed the electric Demand within the LDN.” Criteria c) also makes no sense with respect to internal lines at such industrial sites even where the owner and operator of the on-site electricity generation facilities are registered as a Generation Owner and a Generation Operator.

Yes
Comments: Section 215 of the Federal Power Act denies FERC jurisdiction over facilities used in the local distribution of electric energy. FERC has recognized that since facilities used in the local distribution of electric energy “are exempted from the Bulk-Power System, they also are excluded from the bulk electric system.” Section 215 of the Federal Power Act does not qualify the exclusion from FERC jurisdiction of “facilities used in the local distribution of electric energy.” For example, Section 215 does not state that: ♣ The term “bulk power system” “does not include facilities used in the local distribution of electric energy [unless needed for reliability purposes];” or ♣ The term “bulk power system” “does not include facilities [with automatic interruption devices] used in the local distribution of electric energy.” Any definition of the bulk electric system that does not exclude all “facilities used in the local distribution of electric energy” is unlawful. Further, the definition of the bulk electric system must recognize that Section 215 of the Federal Power Act does not allow the potential reliability impact of a facility to determine whether the facility is local distribution or transmission. By excluding all facilities used in the local distribution of electric energy from the definition of the Bulk-Power System in Section 215, Congress recognized that while facilities used in the local distribution of electric energy may be part of the Bulk-Power System, they are, nonetheless, not FERC jurisdictional. Thus, “facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)” that are used in the local distribution of electric energy are not FERC jurisdictional regardless of the potential reliability impact of the facilities.
Not that we are aware of at this time.
Group
Pennsylvania Public Utility Commission
Darren D. GIll
The Pennsylvania Public Utility Commission offers the following comments in response to Standards Announcement Project 2010-17 BES Definition: As you know, Section 1211 of the Energy Policy Act of 2005, amending Section 215 of the Federal Power Act, provided for the promulgation of standards for the bulk power system by an Electric Reliability Organization subject to the approval of the U.S. Federal Energy Commission. Section 215 (a) states: ‘SEC. 215. ELECTRIC RELIABILITY. ‘‘(a) DEFINITIONS.—For purposes of this section: (1) The term ‘bulk-power system’ means— (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and (B) electric energy from generation facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy. EPAct 2005, Section 1211, 16 U.S.C. § 824o [emphasis supplied] While the PaPUC acknowledges the need for a more explicit definition of the Bulk Electric System (or, as it is stated in EPAct 2005, the “bulk power system”), we are concerned that the existing draft definition and stated exclusions is insufficiently clear and may be erroneously extended to distribution facilities that are currently subject to state jurisdiction expressly reserved by the language of EPAct 2005, Section 1211 (a). Exceptions E1-E4 are plainly drafted to address this issue, but there is a concern that the definition of “local distribution networks” contained in Exception E3 may not fully comport with the intent of Congress, particularly Exception E3 (d) which excepts facilities that are [n]ot used to transfer bulk power: The LDN is not used to transfer energy originating outside the LDN for delivery

through the LDN. The proposed language appears to be contrary to Congressional intent as it implies that some local distribution facilities which “transfer bulk power” are indeed subject to the ERO standards process. Additionally, the draft BES, which distinguishes local distribution facilities between those that “transfer bulk power” and those that do not appears insufficiently precise, as bulk power is ultimately transferred through every portion of the local distribution network to end users. Our major concern is that this draft standard definition will collide with state regulation of distribution facilities, particularly where state commissions are seeking to impose standards and protective arrangements more stringent than might be required by the Electric Reliability Organization or Regional Reliability Organization. Accordingly, it is recommended that the Draft BES be modified to specifically define distribution facilities and exclude them from the ambit of the Bulk Electric System definition, as well as making it clear that State reliability standards relating to the local distribution network are not overridden or modified by standards applicable to the Bulk Electric System.
Individual
David Thorne
Pepco Holdings Inc
Yes
Do reactive power resources include reactors?
Yes
Clarification needed: If a generator greater than 20mva connected to a bus less than 100kv, but the bus is connected through a transformer (high side greater then 100kv) to the BES, are the generator, GSU or transformer considered BES?
Clarification needed: Same situation as described in #3 above.
No
1)In many cases the cranking path or portions of it may consist of facilities less than 100kv. Many of these facilities are local distribution facilities and should not be included in the BES. 2) If there is an identified cranking path that is transmission designated, but the path is not contiguous with the BES, must the elements in-between be included as BES?
Yes
Yes
Yes
No
see answer to #5
1) It would be very helpful to include examples (with an explanation and diagram) of the various configurations that meet each of the inclusions and exclusions. Can the next draft include such examples to provide further clarity to the definitions? Consideration should be given to developing an attachment for this material and a method to add appropriate examples in the future. 2) The proposal is silent on whether associated auxiliary and protection and control system equipment that could automatically trip a BES facility independent of the protection and control equipment’s voltage level are included as part of the BES. The RFC BES definition specially addresses this issue as an example. Does IRO-005 cover those elements so it is not necessary to address these in this proposal? Consideration should be given to referencing the issue in the BES document.
Individual
Gary Ferris
Vigilante Electric Cooperative

Dear NERC Standards Drafting Team: Enclosed are Vigilante Electric Cooperative, Inc's (VIEC) comments on NERC's Proposed Continent-wide Definition of the Bulk Electric System (BES). We believe that NERC's proposed definition of the Bulk Electric System is moving in the right direction and we thank the Standards Drafting Team for their hard work. We support the comments of the Snohomish County Public Utility Distric and Pacific Northwest Generating Cooperative with regard to questions posed by the comment form for Project 2010-17. We would like to add the following additional comments: With regard to exclusion E3, part e) - we do not believe that just because an element is on a list that it cannot be excluded. If an element meets all of the criteria to be excluded, then it should be excluded and removed from the list. Otherwise, we strongly agree that LDNs have no material impact on the BES. We also strongly encourage the continued development of a reasonable method for determination of inclusion/exclusion. We believe that there should be a clearer path that would ultimately allow a utility to pursue being included/excluded from registration with WECC. Many small utilities have an element that may actually have no material impact on the BES yet is required to comply with all WECC standards. We also would like to comment on the WECC compliance bulletin of April 15, 2011. While we greatly appreciate the recognition that radial T-Taps with transformer or distribution protection schemes have no material impact to the BES, we would encourage you to take this the additional logical step to actually remove these instances from WECC responibilities. This would help reduce the burden both on WECC and the individual entities and save everyone involved a tremendous amount of time, effort and money. We again thank the Team for their efforts and appreciate the opportunity to be allowed to comment on these issues.
Individual
Steve Alexanderson
Central Lincoln
No
We support the PNGC comments suggesting beginning with the statutory definition of BPS that excludes local distribution. The definition should also be further elaborated to show specific points of demarcation for each inclusion and exclusion by the use of diagrams similar to those included with Proposal 6 from the WECC Bulk Electric System Definition Task Force. We also note that per the flowchart at http://www.nerc.com/docs/standards/sar/20110428_BES_Flowcharts.pdf, any >100 kV element that does not meet an inclusion or an exclusion ends up being included. We don't think that was the SDT's intent. For example a 5 kW solar project connected at 115 kV does not meet any inclusions so proceed to the exclusion box. It is not radial load, behind a retail meter, or part of an LDN so it is BES by application of the definition. We realize this flowchart was drafted by another team. It therefore becomes imperative that the definition team clearly specifies exactly what becomes of an element that does not meet an inclusion.
No
We support the SDT's intent, but it is unclear from the language how single winding transformers (autotransformers) are handled. We suggest replacing "two windings…" with "two sets of terminals…." Please also indicate how transformers with only one set of terminals above 100 kV are treated, since we don't believe the flowchart at http://www.nerc.com/docs/standards/sar/20110428_BES_Flowcharts.pdf properly expresses the SDT's intent to classify these transformers as non-BES.
Yes

But please indicate how generators below 20 MVA are treated, since we don't believe the flowchart at http://www.nerc.com/docs/standards/sar/20110428_BES_Flowcharts.pdf properly expresses the SDT's intent to classify these small units as non-BES.
Yes
Please indicate how aggregate generation below 75 MVA is to be treated, since we don't believe the flowchart at http://www.nerc.com/docs/standards/sar/20110428_BES_Flowcharts.pdf properly expresses the SDT's intent to classify these small plants as non-BES.
Yes
But please indicate how blackstart resources (regardless of voltage) not in the TO's restoration plan are treated, since we don't believe the flowchart at http://www.nerc.com/docs/standards/sar/20110428_BES_Flowcharts.pdf properly expresses the SDT's intent to classify these resources (when also below the 20 or 75 MVA thresholds) as non-BES.
Yes
But please indicate how dispersed aggregate generation below 75 MVA is to be treated, since we don't believe the flowchart at http://www.nerc.com/docs/standards/sar/20110428_BES_Flowcharts.pdf properly expresses the SDT's intent to classify these resources as non-BES.
Yes
FERC has made clear throughout the Order No. 743 process that the exclusion for radials be retained. We believe the exclusion as drafted adequately defines radials.
No
We support excluding behind the meter generation below the limits, but the string of "ands" and "ors" in this exclusion are far too confusing with numerous ways to parse them. Suggest eliminating bullet (ii) since the existence of obligations has no bearing on impact.
No
Central Lincoln strongly supports the exclusion of LDNs. These networks are used for improving local service, not for BES reliability; and their use should not be discouraged. However, we see problems with the language of part d. Part d uses the term the undefined term "bulk power" as part of the overall definition of "bulk power system," leading to a circular definition. Did the SDT mean to indicate that no power may be transferred though an LDN? If so, suggest striking the word "bulk." We also believe the SDT meant to define the LDN in terms of normal operating conditions, since all LDNs would transfer power under the right contingency (such as a complete loss of load within the LDN). Please make it clear that part d test applies during normal operating conditions.
Yes
Central Lincoln supports the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that can ill afford the substantial costs that accompany imposition of mandatory compliance with reliability standards. Further, we agree that the small utilities covered by the exemption will have no measurable impact on the operation of the interconnected BES. In the Pacific Northwest, many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.
No
We believe the SDT has excluded most distribution facilities, but not all. The remaining distribution facilities will find it necessary to go through a lengthy exception process. As stated in Q1, we support the PNGC comments stating that local distribution as determined by the seven factor test should be excluded by definition. We note that the SDT has also developed a technical principal document that uses language similar to the seven factor test. To use it, though, an entity must apply for exception first. We believe the seven factors or technical principles should be part of the definition in order to avoid numerous exception applications and resulting delays.
Yes
Improper classification of local distribution facilities, even if only for the duration of the exceptions process; puts these facilities under the regulatory jurisdiction of NERC contrary to the Federal Power Act when they should be under the exclusive jurisdiction of state utility commissions or local utility

boards.
We believe the Exception process is critical both to ensure that the BES definition is effective in producing measurable gains to bulk system reliability and to ensuring that the definition will comply with the limitations Congress placed in Section 215. Hence, we believe the entire BES definition, including the Exception process and related procedures, should be vetted through the NERC Standards Development Process, including the full comment periods and a ballot approvals provided for in that process. We are concerned that important elements of the BES definition have been assigned to the Rules of Procedure Team, and that changes in the Rules of Procedure are subject to approval in a process that provides considerably less due process and industry input than the Standards Development Process. Accordingly, we urge that all elements of the BES definition, including those elements that have been assigned to the Rules of Procedure Team, be vetted through the Standards Development Process. We note also that the SAR still does not apply the definition to all registered entity types in violation of the FERC order to provide a continent-wide definition. Please include PSEs in the SAR also. We are concerned that the proposed 24-month delay in the effective date of the new definition will delay the potentially beneficial effects of the SDT's efforts, especially for utilities that have been inappropriately required to meet BES reliability standards, which is a common situation in WECC. We therefore urge the new BES definition to become effective immediately upon approval by FERC or other applicable regulatory agencies. Entities that have been improperly required to meet standards can then immediately redirect resources to where they are truly needed. For entities that have not previously been registered for BES-related functions but that would be required to register under the new definition, we agree that 24 months is an appropriate transition period to allow the newly-registered entity to attain compliance with newly-applicable reliability standards, many of which require new training for employees, new maintenance procedures, and complex new operational protocols. However, the transition period for newly-registered entities should be structured in a way that does not prevent other entities from benefitting from the new definition at the earliest possible date.
Individual
Neil Phinney
Georgia System Operations
It is unclear to us what the phrase "including the generator terminals through the GSU..." means. Is the GSU itself included (it apparently would not be under I-1)? We understand terminals to be in essence points, and therefore don't see how they go "through" a GSU. Is the intention perhaps to mean "including the generator terminals at the GSU" or even "including the generator terminals at the GSU and the GSU itself"?
A. The phrase "which is described as" is unclear. If the intention is to mean "which is defined as," the term "Radial System" should be capitalized and added to the glossary. Otherwise, consider deleting the phrase. B. It is not clear whether the automatic interruption device on the excluded system is itself in or out of the BES. Can the drafting team clarify this intent with respect to breakers protecting radial lines (perhaps compared to circuit switchers protecting load serving transformers)? Drawings could be very beneficial here. C. The second part of sub-bullet "a" (the sentence beginning "A normally open switching device...") applies not only to "a" but to all the sub-bullets, and therefore should be moved to either the initial sentence or to be a closing item after the last sub-bullet. For example, if the sub-bullets are indented, and then this sentence returns to the original margin, that would show that it applies to any "radial system" and not just to a system falling under a single sub-bullet.
How is "net capacity provided to the BES" measured (e.g., by nameplate capacity minus peak load, by actual generated energy – rather than capacity - minus actual load at each moment or over some period of time, etc.)? It is possible that a larger than currently necessary generator may be installed in anticipation of future load growth, but that it is never used to generate significantly more than what is needed for load. Depending on how "net capacity" is calculated, such a generator might unnecessarily be pulled into the BES.

In item c, What is meant by “generation” and by “electric Demand,” and how is whether “generation within the LDN…exceed[s] the electric Demand within the LDN” to be calculated? Is this installed nameplate capacity (rather than energy) minus peak Demand, or minus forecast Demand, or minus actual Demand – in each case either for some period of time or at every moment (the NERC Glossary defines Demand as either)? Is it the actual generated energy minus actual or forecast Demand for some period of time or at every moment? If the definition is based on capacity, this exclusion should allow for the possibility that a larger than currently necessary generator may be installed in anticipation of future load growth, so long as it is never used to generate significantly more than what is needed for load. If actual generated energy is intended, the exclusion should provide for inadvertent and/or de minimis power flows.
Individual
Bill Harm
PJM
Yes
Yes
Yes
No
As written I3 implies a contiguous system from the unit to a “common bus operated at a voltage above 100 kV” there is no technical justification for a contiguous system. The requirement should read “Multiple generating units located at a single site with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) including the generator terminals through the GSU“
No
Black start units are used to start other units to when the BES is compromised. There is no technical justification to include all elements in the “cranking path” as BES facilities.
No
As written I5 implies a contiguous system from the unit to a “point a system element at a voltage above 100 kV” there is no technical justification for a contiguous system. The requirement should read “– Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a collector system through a common point of interconnection."
Yes
Yes
Yes
No
There is no technical justification to include/exclude elements based on the asset size of the owning company. The exclusion should be based on the technical merits.
No
The bright line exclusion includes facilities that would normally be BES facilities but are excluded based on the asset size of the owner.
No

Individual

Heather Hunt

New England States Committee on Electricity

Yes

The New England States Committee on Electricity ("NESCOE") appreciates the work of NERC's standard drafting team as well as the opportunity to provide comments on the proposed Bulk Electric System ("BES") definition. The proposed revision to the BES definition could have significant impacts on New England's transmission grid and ratepayers. As NESCOE noted in prior comments to FERC on this issue, NESCOE shares the interest in continually assessing means to improve system reliability. Comments of the New England States Committee on Electricity, Docket Nos. RM 09-18 and RM10-6 (May 10, 2010). However, NESCOE is concerned that the definition, as proposed, may impose substantial new costs on New England transmission owners. In NESCOE's view, any new costs a revised definition imposes – which fall ultimately on consumers - should provide meaningful reliability benefits. NESCOE's suggestions are intended to capture in the BES definition only those facilities having a direct impact on the reliability of the BES and to ensure that costs imposed have attendant reliability benefits. The concept of clarifying inclusions and exclusions is generally helpful. However, the language needs to be refined and/or clarified further. One primary concern relates to sub transmission networks. New England's electric transmission system is comprised of networks operated at voltages greater than 100 kV and at voltages less than 100 kV. The networks operated below 100 kV are referred to as "sub transmission" networks. They employ various operating voltages including 13.8 kV, 34.5 kV, 46 kV and 69 kV. NESCOE is concerned that the proposed BES definition and the proposed Inclusions I1 through I5 may bring many elements (generators, transformers and lines) of these sub transmission networks into the BES at substantial costs to New England ratepayers, without providing meaningful reliability benefits. To address this concern, NESCOE suggests that the proposed Inclusions be clarified to exclude generation connected to New England's sub transmission networks from the BES regardless of MVA rating. A second concern relates to the treatment of renewable generation. NESCOE believes that renewable generation complexes, either multiple or dispersed, should be granted flexibility regarding the Inclusion 3 rating threshold for inclusion in the BES. Finally, while NESCOE is still assessing the impacts and necessity of inclusion I4, NESCOE suggests that black start units and associated cranking paths not be considered BES. Please see further comments below.

Yes

Inclusion I1 now appears to exclude transformers that connect the BES to the sub transmission networks (the sub transmission elements connected to one of the windings is less than 100 kV). This suggests that the intent of this language is to exclude such transformers and all sub transmission elements (unless included by the other Inclusion criteria) from the BES. With that understanding, NESCOE supports Inclusion I1.

No

Inclusion Criteria I2 through I4 relate to generation connected with GSU High side voltages greater than 100 kV and refer to generators with MVA limits exceeding either 20 or 75 MVA aggregate depending on their configuration. It should be made clear that all generation connected to sub transmission are not BES as these units are adequately covered under other applicable NERC and/or regional reliability organization criteria. These units have no direct impact on the reliability of the BES. This includes black start units because they do not directly impact normal or contingency operation of the BES. These units and their associated cranking paths are used only for restoration and not operation. Further, they are appropriately covered under regional restoration procedures and NERC standards (see for example, Emergency Operating Procedure EOP-005-2). Use of varying generator MVA thresholds as inclusion criteria under I2 and I3 could lead to inconsistent treatment of generation facilities. For example, a generation facility with a single 30 MVA generator would qualify as BES under I2. However, if an additional 30 MVA generator was added at the same site, the facility's status would change to non-BES under I3 even though the facility's capacity had doubled. NESCOE is also concerned that if the BES is required to be contiguous, the I2 threshold will result in many radial sub transmission lines becoming BES, resulting in substantial costs without significant justifying benefits. NESCOE suggests deleting Inclusion I2 or adopting a threshold that is consistent with I3, and which in no event should be lower than 75 MVA. Regarding facilities connected at 100 kV and above, some generation units in paper mills or other entities operating on the retail side of the meter may exceed the Inclusion Criteria. The Exception Process, which will be the subject of future comments, should

provide some flexibility in this area. NESCOE further notes that in the case of radially connected generation, the contiguous connection paths should not be BES even if the operating voltage is greater than 100 kV. This is due to the fact that loss of a path has no greater impact than loss of the connected generator. This is simply a first contingency loss that has no significant impact on the BES. Inclusion I2 should be clarified to include only connections that impact the BES.
No
Please refer to comments under 3 above. Additionally, regardless of the connection voltage, the 75 MVA limit may unintentionally impose unnecessary added costs to renewable generation, thus inhibiting the development of these resources. This is of particular concern to New England, which has aggressive renewable energy objectives and is working to develop resources in and around the region to meet them in the most cost-effective way. Looking forward, the exception process should provide criteria allowing flexibility as to the aggregate MVA rating as related to the specific connection and impact on a region. This will be discussed further in comments on the Exception Process as appropriate.
No
Please refer to comments under 3 above. Black start units should be excluded from BES. These units and their associated cranking paths are used only for restoration and not operation. Such units are appropriately covered under regional restoration procedures and applicable NERC standards (see for example, Emergency Operating Procedure EOP-005-2). NESCOE is still exploring the impact and necessity of this proposed inclusion.
No
As noted in comment under 4 above, the 75 MVA threshold may unintentionally impose unnecessary added costs that may ultimately be paid by New England ratepayers. The exception process should provide flexibility as to total MVA rating. In addition, NESCOE believes this language should be clarified to exclude collector systems and include only elements that actually impact the BES.
Yes
NESCOE generally supports these exclusions. However, NESCOE also notes that subsections (b) and (c) could (depending on the final definition of Inclusions I2 through I5) sweep many sub-transmission load serving elements into the BES, at a cost that is not justified in terms of reliability benefits. Regarding sub transmission, Exclusion Criteria E1 and E2 are concerned with radial configurations while E3 relates to Local Distribution Networks (LDN's). None of these apply to sub transmission networks that may contain both looped and radial configurations. Also, sub transmission networks may have power flowing parallel to the BES and may have power flowing into the BES with no potential for adverse impact on the reliability of the BES. Sub transmission networks operated at voltages less than 100 kV, connected to the BES via non-GSU transformers, should be excluded from the BES regardless of their configuration. It should be clear that all generation facilities connected to sub transmission are not BES as these units are adequately covered under other applicable NERC and/or regional reliability criteria. These units have no direct impact on the reliability of the BES. Regarding facilities at operated at 100 kV and above, the switching configuration as defined is not clear and possibly overly restrictive. The definition should incorporate language related to avoiding "parallel paths" with diverse electrical nodes in the BES.
Yes
Please refer to comments in number 7 above. Additionally, there appears to be an inconsistency in how generating units are expressed in E2 (net capacity) and in I2 and I3 (MVA).
Yes
NESCOE believes that this language appropriately excludes facilities that serve local distribution loads from the BES.
No
This appears overly restrictive in that it only includes networks connected at a single source. Please see comments under 7 above.
No
As stated in 1 above, NESCOE is concerned that the proposed definition may unintentionally incorporate facilities into the BES that do not have a direct impact on the reliability of the system, potentially imposing significant costs without meaningful reliability benefits.

Yes
A possible conflict exists with respect to state renewable resource objectives. Please refer to number 4 above regarding renewable energy objectives, which includes state legislation regarding renewable portfolio standards.
As a general matter, the definition should reference the Exception Process, which may cause assets and facilities to be further “included” or “excluded.” In particular, once a facility has qualified for Exclusion it is not clear how that status is maintained.
Individual
Darryl Curtis
Oncor Electric Delivery Company LLC
Yes
No
The reference to two windings is technically incorrect because it would exclude autotransformers which technically only have one winding. Recommend rephrasing this to say that both the high-side and the low side of the transformer connected at 100 kV or higher. I1 Suggested Language: “I1 - Transformers, including phase angle regulators, with both the high-side and the low side of the transformer connected at 100 kV or higher unless excluded under Exclusions E1 and E3.”
Yes
No
The ERCOT Region already considers load in any combination equal to and over 20 MVA through a single Point of Interconnect as part of the BES
Yes
No
The ERCOT Region already considers load in any combination equal to and over 20 MVA through a single Point of Interconnect as part of the BES
Yes
Yes
Yes
Yes
Yes
No
Individual
Charles Yeung
Southwest Power Pool
No
SPP generally agrees with the substance of the SDT’s changes, but suggests a different approach. In order 743, to remedy its concerns, FERC suggested eliminating RE discretion in defining the BES, and instead basing it upon a bright-line 100kV threshold, provided that elements above and below 100kV could be excluded and included, respectively, based on specific procedures. Consistent with that approach, SPP suggests that the BES definition itself establish a bright line standard, with inclusions and exclusions managed through the exemption process. With respect to exclusions (and inclusions),

FERC contemplated a process involving stages that established “exclusion” criteria in the first instance. If equipment met such criteria, the process ended there and it was exempt. If the equipment did not meet the bright-line criteria, then it moved to the “exemption” analysis, which contemplated additional critical analysis to determine if exemption was warranted. SPP believes that structuring the revised definition in accordance with this approach is more consistent with FERC’s intent of having an inclusive definition in the first instance, with modifications occurring subsequently pursuant to critical analysis in a well defined exemption process. Revising the BES definition consistent with the above principles would counsel in favor of revisions to the current definition that removed RE discretion and provided for inclusion or exclusion on a case by case basis. SPP also believes that the BES definition should provide for a general exclusion of distribution facilities. In Orders 743 and 743-A, FERC made clear that, consistent with the terms of EPAct 2005, distribution systems were excluded from the BES. However, FERC also made clear that it reserved the right to judge whether something was distribution or transmission, and, therefore, subject to its jurisdiction. Consistent with FERC’s findings in this regard, the SRC believes that the definition should provide the general exclusion, with specific exclusions being performed as part of the exception process. This will meet the goal of respecting Congress’ exclusion of distribution facilities, while ensuring the distribution/transmission distinction is subject to clear, objective standards the application of which can be critically reviewed by FERC to provide the appropriate procedural and substantive checks FERC envisions to ensure its jurisdiction is applied in all relevant cases to facilitate enhanced system reliability. However, consistent with the approach described above, the BES definition should not be characterized in terms of inclusions or exclusions, but rather as general thresholds, with modifications occurring solely pursuant to the exemption process. Applying the approach described above, the BES definition would reflect general thresholds. Specific circumstances warranting exclusion/exception/inclusion would occur via a separate process –SPP is not disagreeing with any of the SDT’s inclusions or exclusions, it is merely suggesting that they be addressed in that separate process. Consistent with this approach, SPP offers the following language: The Bulk Electric System shall include: A) all Transmission Elements operated at voltages 100 kV or higher; B) all generation resources that: 1) are individual units greater than 20 MVA; 2) multiple units at a single facility that are equal to or greater than 75 MVA in the aggregate, provided that all units have a common point of interconnection; and 3) multiple units connected to a collector system that are equal to or greater than 75 MVA in the aggregate; 4) all Blackstart Resources regardless of size; and C) Reactive Power resources connected at 100 kV or higher. The BES shall not include distribution facilities, and Radial transmission facilities serving only load with one transmission source are generally not included in this definition. The foregoing notwithstanding, any relevant element (e.g. transmission, generation, etc.) may be identified as an exception and excluded or included in the BES pursuant to the process delineated in the NERC Rules of Procedure and subject to the exclusion or inclusion criteria. All equipment specific issues that affect exclusions/exceptions/inclusions would then be addressed via the Rules of Procedure processes and the exclusion and inclusion criteria.
Yes
SPP agrees that such equipment should be included, but suggests that these issues be addressed in the exception process. In other words, this inclusion doesn’t need to be explicitly identified. It would simply be included under the general 100 kV threshold, and to the extent an owner believed the characteristics of its equipment don’t warrant inclusion, it would seek an exception, which can be for either an exclusion or an inclusion.
Yes
Please refer to SPP's response to question 1. but, consistent with the comments to question 1, believes it should be reflected as part of the general definition, as opposed to inclusions/exclusions, which should all be addressed pursuant to the separate processes.
Yes
Please see SPP's response to question 3 – SPP agrees with substance, but not the approach.
No
Please see SPP's response to question 3 – SPP agrees with the substance, but not the approach.
No
Please see SPP's response to question 3 – SPP agrees with the substance but not the approach.
No
Please refer to SPP's response to question 1 – while SPP does not necessarily disagree with the

substance of the proposed exclusions, it believes all exceptions, which may be either exclusions or inclusions, should occur pursuant to the separate process and criteria being developed that will be established in the NERC ROP. The BES definition should be more general in nature, focusing on objective thresholds. All exclusions should be addressed in the separate proceeding being conducted in parallel with this proceeding to develop the exception process, and SPP reserves its right to comment on the substance of such proposals in that proceeding.
No
See response to question 7.
No
See response to question 7.
No
These entities should be subject to the exception process within the exclusion criteria. They warrant a “first instance” exclusion in that process, but any such action should occur there, as opposed to the definition of BES. SPP believes this is more consistent with FERC’s position that BES should reflect an objective threshold, with exceptions being subject to review by the ERO and FERC, as applicable. It may prove through that process that these entities receive the presumption of exclusion, but that should take part in that process as opposed to being granted a de jure exemption from the definition. Accordingly, SPP suggests that this issue be raised in the concurrent BES exception proceeding as an exclusion criterion, and SPP reserves its right to comment on the substance in that proceeding.
No
See response to question 1 – SPP does not necessarily disagree with the characterization of excluded distribution facilities, but believes that issue should be addressed in the concurrent BES exemption proceeding for the reasons described in question 1. SPP reserves its rights to comment on the criteria for exclusion/inclusion in that proceeding.
Yes
See SPP's response to question 1 – SPP believes defining BES in terms of the relevant exclusions may be contrary to FERC’s suggested approach in 743 and 743-A. While FERC did not mandate a particular approach, and gave the ERO the opportunity to propose an alternative to its suggested approach, it stated that any alternative must be equal to or greater than its suggested approach in terms of remedying the identified flaws associated with the current definition. Part of the remedy envisioned by FERC included the removal of subjectivity in defining BES and the ability of the ERO and FERC to review any proposed exemptions from the bright line definition. Although the exclusions strive to apply objective criteria, it is arguable that any such circumstances may not be that clear and may require some level of subjective judgment as to whether elements deemed to be distribution according to the exclusion criteria actually are distribution, as opposed to transmission. In addition, FERC expressly stated that it reserved the right to make that determination in the first instance. This approach takes that away from FERC.
Group
Texas Industrial Energy Consumers (TIEC)
Katie Coleman
Yes
TIEC supports excluding radial loads serving only load or generation resources that do not trigger NERC registration requirements. This is consistent with the FERC’s intent and the existing BES definition. However, TIEC believes that this exclusion should not be contingent upon a radial system “originating with an automatic interruption device” as proposed by the SDT. Radial feeds serving a system that contains only load and generation that does not trigger registration requirements should

be categorically excluded from the BES definition regardless of whether the radial lines originate with an automatic interruption device. It should be the responsibility of the transmission provider to ensure that its facilities and interconnection properly protect the grid from facilities that fall under this exclusion, just as the transmission providers do for other load and unregistered generation. The absence of automatic interruption device should not trigger inclusion as a part of the BES, but should trigger a requirement upon the transmission provider to install such a device on its side of the facilities or take other measures to insulate the grid from the activities of a radial network. Accordingly, TIEC would proposed to strike the phrase "originating with an automatic interruption device" from the proposed exclusion language.

Yes

TIEC supports this exclusion with two clarifications. The language currently excludes generation on the customer's side of the meter as long at "the net capacity provided to the BES does not exceed the criteria identified in Inclusions I2 or I3." There are special circumstances in which an regional Reliability Coordinator may ask that customer-owned generation export to its maximum capability (i.e., with its load curtailed to the lowest level) in order to support grid reliability. Circumstances such as this should not be considered in determining whether the "net" capacity exported to the BES exceeds the threshold for registration. Additionally, there are often instances when customer-owned generation and associated load are in start-up or shut-down processes that may cause the net export to the BES to vary such that it temporarily exceeds the registration thresholds. Outlying situations such as these should not trigger registration. Rather, the "net" capacity should be interpreted as the typical amount exported during steady-state operation of the site. This interpretation of "net capacity" should also apply to exclusions E1 and E3.

Yes

Proposed exclusion E3 should be revised to categorically exclude all facilities that are part of a local distribution network (LDN), regardless of the specifics of the LDN's interconnection with the Bulk Electric System. As currently drafted, Exclusion 3 places a number of inappropriate limits on a whether a local distribution system is excluded from the Bulk Electric System definition. As recognized by the Commission in Order No. 743-A, Section 215 of the Federal Power Act categorically excludes local distribution systems from the Bulk Power System definition without qualification. As a result, LDNs are outside the FERC's jurisdiction and are outside the scope of this rulemaking. The SDT should revise the approach to Exclusion 3 to exclude all facilities that are part of a LDN, regardless of how the LDN is interconnected to the grid. Specifically, making exclusion of an LDN contingent upon the LDN being connected through automatic fault-interrupting devices is inappropriate. Similar to the concerns TIEC expressed in response to Question 7, above, if there are concerns about LDNs impacting the Bulk Electric System, then it is the responsibility of the transmission provider serving the LDN to ensure that systems and facilities are in place to protect the grid. The specifics of an LDN's interconnection to the grid should not dictate whether it is subject to regulation. TIEC would therefore recommend removing proposed qualification (a) to the LDN exclusion. Further, the requirement that generation in the LDN can never exceed demand is inappropriate. As the SDT properly recognized in Exclusion 2, as long as the generation within an LDN does not trigger registration requirements, the LDN should be able to export power to the grid without subjecting itself to regulation. Many LDNs export small amount of power intermittently to balance the flow within the LDN. Subjecting these networks to regulation as a result of this balancing activity is inconsistent with the existing generation registration requirements and would exceed the scope of this rulemaking. The existing generation registration requirements exempt customer-owned generation that serves retail load from generation registration requirements as long as the net capacity provided to the bulk power system does not exceed the nameplate requirements for stand-alone generators. Consistent with this approach, an LDN should not have to be registered as long as its net exports to the grid do not exceed the generation registration requirements. TIEC accordingly requests that proposed LDN characteristics (c) and (d) be removed as qualifications to the LDN exclusion, and that the exclusion be revised to allow generation output to the grid as long the net export to the grid does not exceed the threshold levels for registration as a generator owner/operator.

No

TIEC appreciates the SDT's effort to identify situations where facilities rated above 100 kV should still be categorically excluded from the BES definition This recognition is consistent with the concerns raised by TIEC and many of its individual members in comments to the FERC in Docket RM09-18-000.

However, TIEC submits that the SDT's approach to these exclusions should be revised to meet FERC's express recognition in Order No. 743-A that "facilities used for local distribution are excluded from the Bulk-Power System definition under section 215, and thus are excluded from the bulk electric system." Order No. 743-A at ¶58. It is crucial that the BES definition is drafted in a way that recognizes that it is the transmission provider's responsibility to ensure that equipment is in place to protect the BES from the operations of excluded facilities, not the responsibility of a person owning facilities involved in the local distribution of electricity. These issues are addressed in further detail in response to the specific exclusions.

Individual

Geoff Carr

Northwest Requirements Utilities

No

As a general matter, Northwest Requirements Utilities (NRU) supports the approach the Standards Development Team ("SDT") has taken to defining the Bulk Electric System ("BES"). The changes made in the revised core definition are helpful and represent significant progress toward an acceptable definition. With an effective and efficient exclusion process, the draft will better define the BES as a whole. We urge the SDT to bear in mind the restrictions contained in Section 215 of the Federal Power Act ("FPA") The "bulk-power system" (As per FERC, we treat the statutory term "bulk-power system" as equivalent to the term ordinarily used in the industry, "Bulk Electric System") definition imposes a clear limit on the reach of the mandatory reliability regime. The BES is made up of only those "facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)" and "electric energy from generation facilities needed to maintain transmission system reliability." Congress reinforced that limit in Section 215(i), where it emphasized that the FPA authorizes the imposition of reliability standards "for only the bulk-power system." NRU is concerned that the SDT's proposed definition is overly-broad, and that it will sweep in many Elements that have little or no material impact on the reliable operation of the interconnected bulk transmission grid. For example, the definition uses the arbitrary 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators. Accordingly, for the BES definition to conform to the requirements of the statute, the SDT must adopt an effective mechanism to exempt facilities like these that are improperly swept in by the SDT's brightline approach to inclusions and exclusions. For this reason, the Exception process to accompany the SDT's definition is of critical concern. If the SDT incorporates this statutory language as its core definition, it will have addressed FERC's primary concern with a minimum of disruption to the current NERC system of definitions. The definition could then be further elaborated to show specific points of demarcation for each inclusion and exclusion similar to that Proposal 6 from the WECC Bulk Electric System Definition Task Force ("BESDTF") team to further delineate BES and non-BES facilities.

No

In concept, we support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. In this regard, we note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams noting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort. Also, the reference to "two windings of 100 kV or higher" may create some confusion because many three-phase transformer banks have 6 or 9 windings, depending on whether the transformer has a tertiary. We suggest clarifying this provision by changing the clause reference two windings to read: "the two highest voltage transformer windings of 100 kV per phase that are connected to the Bulk Electric System." We again urge the SDT to consider further delineation of points of demarcation similar to WECC BESDTF Proposal 6.

No

Northwest Requirements Utilities is concerned that I2 inclusion criteria that includes the arbitrary 20

MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted improperly expands the BES definition to include generators that the statute requires to be excluded. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Unfortunately, the SDT appears to have concluded that any interconnection facility operating above 100-kV should be classified as BES. The result will be to require Generation Owners to register as Transmission Owners/Operators, as well, producing substantial additional compliance costs for those Generation Owners but resulting in little or no improvement in the reliability of the BES. We recommend that the SDT, like the Project 2010-07 SDT (commonly referred to as the GO/TO Team), give careful consideration to the practical results of its recommendations rather than relying on abstract conclusions about whether a "contiguous" or "non-contiguous" BES is more desirable. We are concerned that the SDT's pursuit of a "contiguous" BES will result in a substantially over-inclusive BES definition. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. NERC's Standards Drafting Team for Project 2010-07, has already considered this question and, based on an in-depth review of potentially applicable reliability standards, has concluded that generation interconnection facilities, even if operated above 100-kV, need to comply only with a limited set of reliability standards in order to achieve the reliability goals. Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability.
No
Northwest Requirements Utilities is concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition.
Yes
Including "all" blackstart and blackstart cranking paths in the BES may ultimately provide an incentive to the electric industry to reduce the number of resources with blackstart capability. We therefore suggest that essential blackstart resources identified by the Regional Entity should be included in the Bulk Electric System, but non-essential blackstart resources need not be.
No
Northwest Requirements (NRU) agrees that it is important to address wind generation facilities and similar generation facilities in which a large number of generating units, each with a relatively small capacity, are clustered and fed into the grid at a single interconnection point. That being said, NRU is concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained. We believe the exclusion as drafted adequately defines radials.
No
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold (through

reference to Inclusion I2) lacks an adequate technical justification in this context. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit ("standby, back-up, and maintenance power…") should be eliminated.

Yes

Northwest Requirements Utilities (NRU) strongly supports the categorical exclusion of Local Distribution Networks from the BES. In fact, for reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are, of course, probably the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. NRU supports the LDN exclusion, but we believe the exclusion should be refined in the following respects: • The SDT's draft states that: "LDN's are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load." (emphasis added) We recommend that the SDT revise the sentence quoted above as follows: "LDN's are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load and not to accommodate bulk transfers of power across the interconnected bulk system." By instituting this suggestion, the SDT would emphasize the key difference between an LDN, which is designed to reliably serve local, end-use retail customers, and the BES, which is designed to accommodate bulk transfer of power at wholesale over long distances.

Yes

Northwest Requirements Utilities supports the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that can ill afford the substantial costs that accompany imposition of mandatory compliance with reliability standards. Further, we agree that the small utilities covered by the exemption will have no measurable impact on the operation of the interconnected BES. In the Pacific Northwest, many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.

No

While Northwest Requirements Utilities (NRU) agrees that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing most local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed at greater length in our answer to Question 1, NRU believes that the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES. As discussed in our answer to Question 3, NRU notes that exclusion of facilities from the BES does not mean that owners of those facilities are entirely exempt from reliability standards. On the contrary, the statute provides that "users" of the BES can be subject to reliability regulation. Hence, even where an entity does not own BES assets, it could be required to, for example, provide necessary information to the applicable Reliability Coordinator and to participate in the regional Under-Frequency Load Shedding program by setting the UFLS relays in its Local Distribution Network at the appropriate settings. We note that participants in the WECC BESDTF Task Force generally agreed that appropriate information should be provided by non-BES entities, although there was considerable concern related to ensuring that the provision of information was not unduly burdensome.

Yes

The Exceptions process is a necessary part of making this proposal complaint with the Federal Power Act. As noted in our responses to Question 1 and Question 11, we believe the basic SDT proposal is potentially in conflict with the limitations of the Federal Power Act, and in particular the statutory exclusion for facilities used in the local distribution of electric energy. The SDT's approach can meet the statutory requirements only if the Exception process currently under development results in facilities that are not properly classified as BES being exempted from regulation as BES facilities.

Northwest Requirements Utilities (NRU) has these additional concerns: • The current definition

provides that “Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process.” NRU is concerned that the SDT carefully delineate which entity has the burden of proof in the exclusion process. The WECC BESDTF approach, which we commend to the SDT, laid out these burdens in some detail. Under that approach, essentially, if a facility is excluded from the BES by virtue of the specific exclusions listed in the definition, the Regional Entity bears the burden of proving that the facility nonetheless has a material impact on the interconnected bulk transmission system and therefore should be included in the BES. On the other hand, if a facility is classified as BES by virtue of the list of inclusions set forth in the BES definition, it can still escape classification as BES, but bears the burden of demonstrating that its facility has no material impact on the interconnected transmission system. We urge the SDT to give careful consideration to these burden-of-proof questions and to follow the lead of the WECC BES Task Force. • For the reasons we have explained in our answer to Question 11, we believe the Exception process is critical both to ensure that the BES definition is effective in producing measurable gains to bulk system reliability and to ensuring that the definition will comply with the limitations Congress placed in Section 215. Hence, we believe the entire BES definition, including the Exception process and related procedures, should be vetted through the NERC Standards Development Process, including the full comment periods and a ballot approvals provided for in that process. We are concerned that important elements of the BES definition have been assigned to the Rules of Procedure Team, and that changes in the Rules of Procedure are subject to approval in a process that provides considerably less due process and industry input than the Standards Development Process. Accordingly, we urge that all elements of the BES definition, including those elements that have been assigned to the Rules of Procedure Team, be vetted through the Standards Development Process.
Individual
Jonathan Appelbaum
United Illuminating
The definition should incorporate the language in Energy Policy Act of 2005 that defines bulk power system. UI agrees in general that facilities operated at 100 kV and above are part of bulk power system. Without the clarification in the definition the possibility of facilities that are not necessary for the operation of the interconnected transmission will be pulled into scope.
No
Inclusion I1 is an attempt to limit the scope of the core definition to only those transformers with a high and low side connection at or above 100 kV. However it is not clear that a transformer connected solely on the high side at 100 kV, that is a distribution transformer, is not included in the BES by the definition. This is because the core definition includes all transmission elements connected at 100 kV, this would include the distribution transformer. Then Inclusion I1 does not eliminate the distribution transformer explicitly. It is only implied that the core definition applies only to those transformers with a high and low side connection at or above 100 kV. UI would prefer a more explicit description. Such as: I1- Only those Transformers, including phase angle regulators, with two windings of 100 kV or higher unless excluded under Exclusions E1 and E3 are included in the definition of BES. Generator Step Up Transformers are included based on the generator. A similar comment can be made for the other inclusions. An alternative solution is to change word Inclusions to a sentence that explicitly states: for the category of element below only include the type of equipment specified. Also The use of the descriptor two windings implies auto transformers with one winding is excluded. UI understands that is not the intent of the team.
UI suggests the following change to E1 eliinating the automatic device: Any radial system which is described as connected from a single Transmission source. These taps are not necessary for the opeation of the interconnected system.
No

The core definition should state that local distribution facilities are not included.
Group
Electricity Consumers Resource Council (ELCON)
John P. Hughes
Yes
We support the expanded structure of the core definition that provides for inclusions and exclusions. This clarification establishes a rebuttable presumption that excluded elements are not BES and appropriately shifts the burden of proof for any subsequent inclusion to Regional Entities or the ERO, thereby minimizing the regulatory burden on the industry, an outcome consistent with the Commission's stated assumption that revising the BES definition should have relatively minor impacts on registrations in non-NPCC regions.
No
Although the BES Standards Drafting Team has stated that it will not propose changing the 20-MVA/75-MVA thresholds, we think the thresholds should be set based on the BA/RC needs in each area and that a suggested range (perhaps by taking a survey of the operational entities) should be in the new BES Definition. Having an arbitrary and capricious number in the new BES Definition just because it is in the current Statement of Compliance Registry Criteria, and requiring significant technical justification for change, does not seem appropriate when so many expert industry commenters have indicated the existing thresholds are too low to be operationally significant.
No
Same response as item 3 above.
Yes
No
The existing language in the NERC Statement of Compliance Registry for radial exclusions should be maintained since the change proposed by the SDT could result in a significant increase in entities and/or facilities that would have to be registered or included (because of the addition of the automatic interruption device). The burden for proving the need for such significant changes should be placed on the ERO and the Regional Entities through the BES Exception Process, not on the users of the BES. In particular, it could force retail load (customers) to register as transmission owners, or engage in other maneuvers to avoid registration, when this is clearly a transmission owner/customer issue (as to whether to install automatic interruption devices). These lines are non-jurisdictional and are obvious under the purview of the state commissions.
Yes
No
There are two different types of LDN: utility owned and customer owned. They should not be treated the same. Criteria (a) through (e) in Exclusion E3 may be appropriate for distinguishing between utility-owned LDN and utility-owned BES transmission often owned and operated by the same integrated utility. A separate, stand-alone exclusion criteria should be established for customer-owned elements that serve to distribute electric energy to on-site loads, including all or part of the electric energy from behind-the-meter generation. Thus, E3 criteria (a) through (e) would apply exclusively to utility-owned elements. For customer-owned elements, the new criterion (f) might read: "Or the LDN is also characterized by: "f) The Elements are customer owned and used to distribute electric energy to on-site loads, including all or part of the electric energy from behind-the-meter generation." See response to #11 below for further justification for this recommendation.
No
We support the concept and intent of the exclusion but it should apply equally to similarly situated loads such as manufacturing facilities that have loads comparable to small municipalities or rural

cooperative utilities. Thus the language should be amended as noted below: "Exclusion E4: Transmission Elements, from a single Transmission source connected at a voltage of 100 kV or greater, owned by a small utility or similarly situated load whose connection to the BES is solely through this single Transmission source, and without interconnected generation as recognized in the BES Designation Inclusion Items I2, I3, I4, or I5. A small utility or similarly situated load is recognized as an entity that performs a Distribution Provider or Load Serving Entity function but is not required to register as a Distribution Provider or Load Serving Entity by the ERO."

No

Section 215 of the Federal Power Act denies FERC jurisdiction over facilities used in the local distribution of electric energy. FERC has recognized that since facilities used in the local distribution of electric energy "are exempted from the Bulk-Power System, they also are excluded from the bulk electric system." Section 215 of the Federal Power Act does not qualify the exclusion from FERC jurisdiction of "facilities used in the local distribution of electric energy." For example, Section 215 does not state that: --The term "bulk power system" "does not include facilities used in the local distribution of electric energy [unless needed for reliability purposes];" or --The term "bulk power system" "does not include facilities [with automatic interruption devices] used in the local distribution of electric energy." Any definition of the bulk electric system that does not exclude all "facilities used in the local distribution of electric energy" is unlawful. Further, the definition of the bulk electric system must recognize that Section 215 of the Federal Power Act does not allow the potential reliability impact of a facility to determine whether the facility is local distribution or transmission. By excluding all facilities used in the local distribution of electric energy from the definition of the Bulk-Power System in Section 215, Congress recognized that while facilities used in the local distribution of electric energy may be part of the Bulk-Power System, they are, nonetheless, not FERC jurisdictional. Thus, "facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)" that are used in the local distribution of electric energy are not FERC jurisdictional regardless of the potential reliability impact of the facilities.

Yes

See response to question 11 above. The definition of "local distribution" should be as defined and practiced in each state (US only) under state laws and regulations, and similarly by the Canadian provincial governments.

Group

Central Maine Power Company

Brian Conroy

Yes

No

By definition above, a transformer with a 100 kV winding is already an "element operated at 100 kV or above." This inclusion is actually intended to exclude transformers with only one winding operated at 100 kV or higher voltage. Therefore, Inclusion I1 should be deleted and a new Exclusion should be made: "Transformers with only one winding of 100 kV or higher, including phase angle regulators, unless included under Inclusions I2, I3, or I5."

Yes

lease note that this departs from NERC's Registry Criteria in that the unit of measurement is MVA instead of MW.

Yes

Please note that this departs from NERC's Registry Criteria in that the unit of measurement is MVA instead of MW.

No

Inclusion I4 should be stricken for several reasons: 1. The SDT states that "One of the basic tenets that the SDT is following is to avoid changes to registration due to the revised definition if such changes are not technically required for the definition to be complete." Adding every black start generator and the designated cranking path is not technically required. All significant black start generation is already included in I2 and I3 and I5. 2. The NERC Compliance Registry notes that not

every generator that is a blackstart unit is “material” – it may not be necessary to the restoration plan or to bulk power system reliability. 3. There is already an existing standard to ensure reliability of blackstart performance. NERC Reliability Standard EOP-005-2 ensures that the facilities critical to system restoration are functional when needed. 4. In CMP’s case, there are two generator locations which are part of the Black Start capability, and they are small hydroelectric stations connected to our 34.5 kV transmission system. Under this inclusion, these small hydroelectric stations and 34.5 kV paths would inappropriately be classified as BES. Other, critical blackstart facilities are already included in the BES definition without I4.
Yes
Please note that this departs from NERC’s Registry Criteria in that the unit of measurement is MVA instead of MW.
No
The definition of radial needs to be clear and comply with Order 743. We do not know what a radial “system” is. Also, “automatic interruption device” is not defined. This exclusion includes “radial” “systems” with more than one supply from a single “source” – including normally-open switches, even those which are intended to be normally closed before further switching takes place (“make-before-break”). This seems to be a problem, per Order page 32. We suggest a compliant and straightforward “radial” exclusion, and recommend that E1 be replaced with, “Those Transmission Elements interconnected to only one other substation through only one transmission line; except those elements included in I2, I3, and I5.” It is clear and it can be applied in a “bright-line”, consistent fashion.
No
E2 refers to “net capacity provided to the BES” (which seems to be a flow on an interconnection, not generator capacity), yet I2 and I3 refer to generator MVA. These are not the same unit which leads to inconsistency. This Exclusion appears to add confusion or additional criteria to that of the Compliance Registry. We recommend that E2 be stricken.
No
This exclusion is vague, but needs to be clear and comply with Order 743. Also, “distribution” is already excluded from transmission and therefore “BES.” Also, E1 refers to “automatic interruption device” and E3 refers to “automatic fault interrupting device”, neither of which are defined. We think that large portions of the network may be inappropriately excluded under this exclusion and exclusion E3 should be deleted.
No
This exclusion E4 seems to already be covered under the E1 “radial” exclusion.
No
Transmission and distribution facilities are already mutually exclusive and are already classified and reported in FERC Form 1. The SDT definition may have rolled in considerable portions of the distribution system for consideration as BES. A small generator that is entered into the black start program would make the complete cranking path BES. As documented previously this inclusion of immaterial generators and subsequently their distribution cranking paths is at odds with the Compliance Registry.
No
No.
Individual
John Cummings
PPL Energy Plus and PPL Generation
No
See the response to Question 13
No
See comments in Question 13.
No

See comments in Question 13
No
See comments in Question 13
No
See comments in Question 13.
Yes
See comments in Question 13.
The BES definition strives to draw a line between transmission customers (load and generation) and the “network” that makes up the bulk electric system. All transmission customers served by the network are not necessarily part of the network just like an on-ramp is not part of the Interstate highway, even though on-ramps deliver cars to the Interstate highway. FERC Order 743 paragraph 115 clearly gives guidance to the NERC BES Definition Team (BESDT) on developing fair exclusion criteria for facilities not necessary for the operation of the grid. PPL Generation and PPL Energy Plus (PPL) are concerned that the FERC order is being read overly expansively to include much more generation in the BES than FERC intended. In the NERC BESDT's latest proposed version of a BES definition, the definition appears to apply to small radial generators (Inclusions I2 and I3) but not to large radial loads (Exclusions E1 and E3). The BESDT has chosen to exclude or include LDNs based solely on the direction of power flow (see for example Exclusion E3-c) when the magnitude of the power flow is more critical than the direction. An example of the stark contrast between treatment of looped and radial facilities is exemplified by the exclusion of looped load and generation facilities of almost any size (Exclusion E3) from the BES, versus the seeming omission of any effort to exclude radially connected generation facilities over 20 MVA. Clearly, FERC Order 743-A paragraph 55 instructs the BESDT to consider “additional facility characteristics” other than voltage to come up with a fair inclusion/exclusion process. The exclusion of looped facilities serving load and generation and the inclusion of radial facilities serving only generation does not appear consistent. Moreover, it ignores the physical reality that radial generator lead lines cannot be overloaded by outages on parallel paths because there are no parallel paths. Further, the MW flow on a radial line is well known and limited to a known maximum (limited to the larger of the generation or load on the end of the line): clearly reasons for exclusion. The BESDT should look carefully at FERC Order 743 paragraph 73 which describes the characteristics of the electrical network that the BES is trying to define. In that order, FERC justified its bright-line, 100 kV threshold, explaining that "many facilities operated at 100 kV and above have a significant effect on the overall functioning of the grid" because they share the following characteristics: 1. "operate in parallel with other high voltage and extra high voltage facilities" i. The “bright line” at 100 kV recognizes many 100 kV lines parallel other HV/EHV lines and can be significantly loaded by failure of the HV/EHV lines. This does not apply to radial lines, even at 100 kV and above. 2. "interconnect significant amounts of generation sources" 3. "operate as part of a defined flow gate" 4. have a "parallel nature" and are capable of “caus[ing] or contribute[ing] to significant bulk system disturbances”. i. Radial lines cannot cause significant BES disturbances since the outage of a radial line is studied in all N-1 planning studies and if the TPL standards are followed, an N-1 should not cause such disturbances. To their credit, the BESDT recognizes part of paragraph 73 in Exclusion E3-d and E3-e (possibly exempting many hundreds of MVA load) but yet fails to exclude radial lines serving generators from the BES “network”. Generation should be excluded from the definition of the BES on the same basis as load. PPL requests the BESDT clearly exclude radial generators up to 200 MVA (1200 amps at 100 kV). This exclusion is clearly justified because it would recognize many (if not all) loads and generators served radially do NOT possess the Network Transmission Facilities characteristics described in FERC Order 743 paragraph 73. PPL hopes that the NERC BESDT will recognize (as FERC Order 743 in paragraph 120 recognizes) that radial facilities and distribution facilities can both be excluded.
Individual
Joe Petaski

Manitoba Hydro
Yes
We recommend that the definition be prefaced with the statement ‘except where provided otherwise by applicable law…’
No
Inclusion I1 requires clarification. The intention of I1 is to include transformers that have both their primary and secondary windings operated at 100kV and the wording in I1 should reflect this. Requiring that only ‘two windings’ must be connected at 100kV or greater for inclusion is not sufficient in the case of 3 separate single phase banks connected to form a delta-wye connection for example. As currently written, even if only the primary windings of this bank were connected at greater than 100kV, this transformer would be included in the BES regardless of the secondary voltage. -Suggested wording: “Transformers, other than Generator Step-up (GSU) transformers, including Phase Angle Regulators, that are connected at 100kV or above on their primary and secondary windings unless excluded under Exclusions E1 and E3. OR “Transformers, other than generator step-up (GSU) transformers, including phase angle regulators, with two windings of 100 kV or higher in the same phase unless excluded under Exclusions E1 and E3.”
Yes
No
It is not clear if this inclusion only applies if the generators at a single site have an aggregate capacity greater than 75 MVA AND are connected through a common bus operated at 100kV or if the inclusion applies if the generators at a single site have an aggregate capacity of over 75MVA regardless of whether or not they are connected through a common bus operated at 100kV or above. For example, would this inclusion apply if a utility has over 75MVA at single generating site but only a small portion of the generating capacity is connected through the GSU to a common bus at 100kV or above and the rest is connected through a common bus operating at less than 100kV? Suggested wording: “Multiple generating units located at a single site connected to a common bus operated at a voltage of 100kV or above with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) including the generator terminals through the GSUs.
No
Inclusion I4 should be modified so that only the Blackstart Resources and designated Cranking Paths required for compliance with the NERC Emergency Preparedness and Operations Standards are included in the BES Definition.
Yes
Yes
No
It is not clear what is meant by “retail Load”. This is not a NERC defined term. Additional detail is required.
No
Exclusion E3 needs to be strengthened to ensure that the LDN will have no impact on the BES. The protective elements preventing the LDN from impacting the BES should be included in the BES. As well, the term Local Distribution Network (LDN) should be defined as a separate NERC Glossary term, instead of being defined in the BES definition.
No
Small utilities should be excluded under the definition of the BES without requiring an additional and specific exclusion.
Yes
Yes
Canadian Entities are not under FERC jurisdiction, so the revised BES Definition may not apply. A number of Canadian Entities have the BES defined within their provincial legislation. This may

introduce differences and even contradictions between elements that are included in the BES according to provincial legislation and the NERC definition.
Manitoba Hydro supports a 100kV bright line definition of the BES (excluding radial systems) that is consistent across all regions. We do not agree with the proposed impact based exception procedure and believe that the BES definition should be stand-alone. In addition, the complexity of the proposed BES definition and associated exception process may not provide the goal of uniform application of the BES definition and moves the burden of assessment and approval to the ERO.
Individual
Kathleen Goodman
ISO New England, Inc.
Yes
This definition does not indicate that there may be other "inclusions" and "exclusions" for which an entity has to seek ERO/RRO approval. Therefore our recommendation is that this definition be modified to resolve this concern. This questionnaire contains information as part of the definition description that is different from the draft Implementation Plan and definition of Bulk Electric System document, specifically the entirety of E4 is included in the questionnaire but in neither of the other two documents; this may lead to confusion by commenters.
Yes
Yes
Yes
No
The SDT states that “One of the basic tenets that the SDT is following is to avoid changes to registration due to the revised definition if such changes are not technically required for the definition to be complete.” However, adding every black start generator and the designated cranking path to the definition of the BES is at odds with the Statement of Compliance Registry Criteria which states: III.c.3 Any generator, regardless of size, that is a blackstart unit material to and designated as part of a transmission operator entity’s restoration plan, or; The SDT should use the registry language in order to not expand the BES to every cranking path on the distribution system from a small generator entered into the black start program. Furthermore, the SDT cannot simply disregard voltage level, because: (a) FERC Order 743 expresses preference for a bright line definition, and (b) Section 215 of the Federal Power Act defines the “bulk-power system” as, in part, “electric energy from generation facilities needed to maintain transmission reliability”. As the NERC Compliance Registry has long recognized, not every generator that is a blackstart unit is “material” – i.e., may not be necessary – to the restoration plan or, therefore, to bulk-power system reliability.
Yes
No
The definition of radial needs clarification; we suggest “fed from a single transmission source, i.e. fed from a single substation at a single voltage”. It is clear and it can be applied in a “bright-line”, consistent fashion. As currently drafted, if the interruption device is not automatic, E1 would not exclude tapped “radial - i.e. single fed” equipment. Does the SDT mean to imply that even transformers which do not have an automatic interruption device on the high side, but have low voltage side at lower than 100 kV, will be considered part of the BES? If so, is the BES considered to extend to where the circuit has an automatic interruption device? Would the bus conductor and leads to the high side of the transformer be BES? This would not be acceptable if the answer is yes. It is important to keep in mind that the in the instance of a radial line served via a tap, the system needs to be designed for loss of the line in any event and requiring an automatic switching device is not necessary. In short, the term radial should be better defined and the requirement for an automatic interruption device should be eliminated.
No
E2 refers to net capacity and yet I2 and I3 refer to MVA. These are not the same unit which leads to

inconsistency. This Exclusion appears to add additional criteria than that of the Compliance Registry; we suggest simply using the language from the Compliance Registry.
No
We think that large portions of the network may be inappropriately excluded under this exclusion and the exclusion should be deleted. If E-3 is retained, then it is recommended that the SDT change the sentence “LDN’s are connected to the Bulk Electric System (BES)” to “LDN’s include transmission connected to the Bulk Electric System (BES)…” An Automatic Interruption device needs to be defined. For example, Iis a fuse an Automatic Interruption device? The definition needs clarification in the phrase: Power flows only into the Local Distribution Network: The generation within the LDN shall not exceed the electric Demand within the LDN; Should this be “Net power …”? One transmission path could be exporting power but the net sum of all paths would always be importing power.
No
This exclusion would not be required if the automatic disconnect requirement was removed from E1. If E1 is not modified as proposed herein then a MW threshold might have to be considered for this E4 definition. E4 should have also been included in the draft definition as well as this comment form.
No
The SDT definition will unnecessarily roll in portions of the distribution system for consideration as BES. A small generator that is entered into the black start program would make the complete cranking path BES. As documented previously this inclusion of immaterial generators and subsequently their distribution cranking paths is at odds with the Compliance Registry.
Yes
The proposal to include all Blackstart units’ cranking paths has the potential to roll into the BES facilities distribution level circuits. Inclusion of those circuits would appear to conflict with statutory exclusion of set out in Section 215(a)(1) of the Federal Power Act, which states that the term “bulk power system”: “does not include facilities used in the local distribution of electric energy.” Section 215 sets the limits on what may be included within the bulk electric system, and thus subject to regulation by the ERO and FERC under the reliability standards regime.
None.
Group
New York State Electric & Gas and Rochester Gas & Electric
John Allen
Yes
No comments
No
By definition above, a transformer with a 100 kV winding is already an “element operated at 100 kV or above.” This inclusion is actually intended to exclude transformers with only one winding operated at 100 kV or higher voltage. Therefore, Inclusion I1 should be deleted and a new Exclusion should be made: “Transformers with only one winding of 100 kV or higher, including phase angle regulators, unless included under Inclusions I2, I3, or I5.”
Yes
Please note that this departs from NERC’s Registry Criteria in that the unit of measurement is MVA instead of MW.
Yes
Please note that this departs from NERC’s Registry Criteria in that the unit of measurement is MVA instead of MW.
No
Inclusion I4 should be stricken for several reasons: 1. The SDT states that “One of the basic tenets that the SDT is following is to avoid changes to registration due to the revised definition if such changes are not technically required for the definition to be complete.” Adding every black start generator and the designated cranking path is not technically required. All significant black start generation is already included in I2 and I3 and I5. 2. The NERC Compliance Registry notes that not every generator that is a blackstart unit is “material” – it may not be necessary to the restoration plan or to bulk power system reliability. 3. There is already an existing standard to ensure reliability

of blackstart performance. NERC Reliability Standard EOP-005-2 ensures that the facilities critical to system restoration are functional when needed.
Yes
Please note that this departs from NERC's Registry Criteria in that the unit of measurement is MVA instead of MW.
No
The definition of radial needs to be clear and comply with Order 743. We do not know what a radial "system" is. Also, "automatic interruption device" is not defined. This exclusion includes "radial" "systems" with more than one supply from a single "source" – including normally-open switches, even those which are intended to be normally closed before further switching takes place ("make-before-break"). This seems to be a problem, per Order page 32. We suggest a compliant and straightforward "radial" exclusion, and recommend that E1 be replaced with, "Those Transmission Elements interconnected to only one other substation through only one transmission line; except those elements included in I2, I3, and I5." It is clear and it can be applied in a "bright-line", consistent fashion.
No
E2 refers to "net capacity provided to the BES" (which seems to be a flow on an interconnection, not generator capacity), yet I2 and I3 refer to generator MVA. These are not the same unit which leads to inconsistency. This Exclusion appears to add confusion or additional criteria to that of the Compliance Registry. We recommend that E2 be stricken.
No
This exclusion is vague, but needs to be clear and comply with Order 743. Also, "distribution" is already excluded from transmission and therefore "BES." Also, E1 refers to "automatic interruption device" and E3 refers to "automatic fault interrupting device", neither of which are defined. We think that large portions of the network may be inappropriately excluded under this exclusion and exclusion E3 should be deleted.
No
This exclusion E4 seems to already be covered under the E1 "radial" exclusion.
No
Transmission and distribution facilities are already mutually exclusive and are already classified and reported in FERC Form 1. The SDT definition may have rolled in considerable portions of the distribution system for consideration as BES. A small generator that is entered into the black start program would make the complete cranking path BES. As documented previously this inclusion of immaterial generators and subsequently their distribution cranking paths is at odds with the Compliance Registry.
No
No additional comments.
Individual
Manny Robledo
City of Anaheim
Yes
I1: Change the "and" to an "or" at the end of the sentence, i.e. Exclusions E1 or E3. E3 (b): Use the same language in E1 (b), i.e. Only including generation resources not identified in Inclusions I2, I3, I4, and I5.
Yes
Change the "and" to an "or" at the end of the sentence, i.e. Exclusions E1 or E3. This appears to be the intent.
Yes
Yes

Yes
Yes
Yes
Yes
Yes
In E3 (b) use the same language as in E1 (b), i.e. Only including generation resources not identified in Inclusions I2, I3, I4, and I5. This avoids re-defining all of the generator provisions here. At a minimum "operated at a voltage of 100 kV or above" should be added at the end of E3 (b).
Yes
No
A functional test, similar to the seven factor test used for FERC Order 888, should be used to identify transmission network facilities independent of voltage. All other electrical facilities not identified as transmission network facilities should be deemed local distribution facilities, and should excluded from the Bulk Electric System pursuant to the statutory Bulk Power System definition provided under federal law (18 CFR 39.1, Title 18, Chapter I, Subchapter B, Part 39)i.e. “facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof), and electric energy from generating facilities needed to maintain transmission system reliability. The term does not include facilities used in the local distribution of electric energy.” Please note that the statute does not reference any voltage level, therefore both transmission network and local distribution facilities each can operate at voltages higher or lower than 100 kV. The radial (E1) and local distribution network (E3)exclusions are a good starting point under the definition, but the exception procedure should have a functional exception for local distribution facilities independent of voltage level.
No
Individual
Chris de Graffenried
Consolidated Edison Co. of NY, Inc.
Guidance Document - The SDT should develop a BES Definition Guidance Document which includes a fairly comprehensive list of Elements considered to be potentially necessary for operating an interconnected electric energy transmission network. This list would include references to Real Power and Reactive Power resources.
No
Recommended changes to the wording used in Inclusion I#1, et al: Formatting - When referring to an Inclusion (or Exclusion), the SDT should use a number/pound sign (“#”) between the “I” and number to avoid confusing “I” with the numerical value “1.”
No
The inclusion of generation to the BES should be subject to an impact test.
No
The inclusion of generation to the BES should be subject to an impact test.
No
Please define the terms “collector system” and “common point.”
No
We agree with the concept of a allowing a radial exclusion from the BES. However, we ask that the term “device” be modified to include the optional plural; “device(s).” Some radial systems may

require isolation by more than one automatic interrupting device.
No
Multiple Connections - The current wording in the second sentence “at more than one location” could be misinterpreted. Replace this sentence with the following wording: LDN’s use multiple connections to the Bulk Electric System (BES) solely to improve the level of service to retail customer load.
Yes
As FERC stated in Order 743-A “… the Commission uses the term “exclusion” herein when discussing facilities expressly excluded by the statute (i.e., local distribution) and the term “exemption” when referring to the exemption process NERC will develop for use with facilities other than local distribution that may be exempted from compliance with the mandatory Reliability Standards for other reasons.” (Footnote 82) Thereby, the Commission clearly established its preferred terminology; “exclusion” for local distribution and “exemption” for exceptions allowed under the NERC designations and Exception Process. The BES Definition and Designations do not fully utilize this FERC wording convention.
The ‘core’ definition is not clear as to whether an Element would be included if it meets any one (or must meet more than one) of the 5 Inclusion criteria for inclusion?
Group
Western Area Power Administration
Brandy A. Dunn
Yes
As a Transmission Operator (TO) it helps us define and write O & M, and operating agreements for our Load Serving Entities (LSE/customers) that prefer to contract the responsibilities to the TO. The definition 'Bright Line Threshold' is a general statement, that needs more definition for the special circumstances in the southwestern U.S. where pump loads provide necessary irrigation. Based upon NERC's compliance registry criteria, small entities prefer to contract responsibilities to the TO in order to forego NERC registration, or the exception process for special circumstances.
Yes
Appreciate the bullet comments that help explain the reasoning for the inclusion.
Yes
the bullet comments that define a specific point for demarcation.
Yes
Yes
Yes
Yes
Yes
Yes
Yes
As discussed in the Applicability of Federal Power Act Section 215 to Qualifying Small Power Production and Cogeneration Facilities document, the concerns regarding the Regulatory Flexibility Act Analysis of 1980 stated in section VII does not define the phrase a 'significant economic impact' from the perspective of a small entity. A small entity may have staffed maintenance personnel, to accomplish its' own maintenance but now prefers to transfer by written agreement with another entity based upon NERC's compliance registry criteria, in order to bypass the NERC registration. The

significant economic impact is the cost associated with the reduced work load for the small entity, maintenance personnel, and the work contracted to another entity.
No
Numerous distribution lines in the western US are 115kV, and some are being upgraded from 115kV to 230kV.
No
Individual
Scott Miller
MEAG Power
Yes
MEAG Power supports the Standards Drafting Team's development of a revised Bulk Electric System (BES) definition in response to FERC Order 743 that is directly linked to an exception process for inclusions and exclusions. The definition must be closely coupled to the exception process and the two must be integrated in the standard that is ultimately adopted. This will ensure that the regulatory requirements apply to only those facilities that materially affect the reliability of the BES. In general, MEAG agrees with the proposed definition and the objectives the Standards Drafting Team has established. MEAG recommends that the team make additional clarifications to provide industry with a better understanding of the inclusions and exclusions, as well as the impact of the inclusions/exclusions on the BES. The definition should exclude generator leads for generating units that do not materially affect the reliability of the BES regardless of the BES designation of the generating unit. In addition, the definition should not require the inclusion of contiguous elements. Generating units that are designated BES are currently required to comply with a subset of NERC Reliability Standards, but may not be material to the reliable operation of the interconnected BES. This portion of the definition should not require that both BES and non-BES generating units have their generator leads defined as BES transmission elements. A length-based criterion for generator leads ought to be considered. For example, the definition should exclude generator leads that are one mile or less between BES elements. The Standards Drafting Team should engage and coordinate with the Standards Drafting Team for Project 2010-07 (the GO/TO task force). This coordination is needed to determine the impacts of the new BES definition on Transmission Owner (TO) and Transmission Operator (TOP) registration. In addition, MEAG recommends that the Standards Drafting Team and the GO/TO Task Force consider, if they have not already done so, the impacts of ownership and operating agreements on registration. For example, clarification of registration impacts for BES elements that are jointly owned by two utilities (e. g. where one utility owns 5 of 20 towers and the other utility owns the remaining towers and the conductor of a transmission line) is required. The definition does not provide clarity on the state of the system conditions (normal or emergency) that should be applied. The definition should apply to only normal operating conditions.
Yes
Yes
The definition should exclude generator leads for generating units that do not materially affect the reliability of the BES regardless of the BES designation of the generating unit. In addition, the definition should not require the inclusion of contiguous elements. Generating units that are designated BES are currently required to comply with a subset of NERC Reliability Standards, but may not be material to the reliable operation of the interconnected BES. This portion of the definition should not require that both BES and non-BES generating units have their generator leads defined as BES transmission elements. A length-based criterion for generator leads ought to be considered. For example, the definition should exclude generator leads that are one mile or less between BES elements. This comment has been raised in Question number 1 as well.
Yes
Yes
The Standards Drafting Team needs to clarify whether this inclusion is intended to apply to local

transmission operator restoration plans or only to the Balancing Authority's restoration plans. This inclusion should be stated as follows: Blackstart Resources and the designated cranking paths identified in the Balancing Authority's Restoration Plan regardless of voltage." Local restoration plans may not be material to the restoration and operation of the BES, but black start resources for the Balancing Authority's restoration plan are material to the reliable restoration of the BES.
Yes
This inclusion should be specific to the type of generation that the team envisioned it to capture (e.g. wind and solar). Since the term "dispersed power producing resources" can be interpreted to include generation resources from a few KW up to 50 MW, this inclusion can be misinterpreted to include "peaker GT's", fuel cells and microturbines, etc.
No
The definition of Exclusion E1 does not cover radial systems that are connected to a single transmission source by more than one automatic interruption device, such as occurs with a "breaker-and-a-half" arrangement. The definition should be modified as follows: "Any radial system which is described as connected from a single Transmission source originating with one or more automatic interruption devices and: ...." This exclusion uses many terms that are not defined under NERC's standard definitions: "radial load", "automatic interruption device" and "make–before-break". If these terms are used to define an exclusion and can be understood or interpreted differently by different people, then the terms should be formally defined.
Yes
Yes
Yes
Yes
No
NO. General comments are listed under Question 1.
Individual
Alice Ireland
Xcel Energy
Yes
Yes
The drafting team should consider how components such as autotransformers would be considered under this aspect, and if additional language needs to be added to clearly include certain autotransformers.
Yes
Xcel Energy thanks the SDT for their work and appreciates the clarification that BES extends from the generator out and does not include the prime mover and balance of plant equipment.
Yes
Yes
No
For dispersed power producing resources, such as wind farms, we do not see the value in making each individual 1-2 MW wind turbine a BES element. The BES applicability should be focused on the point when the collective becomes large enough to impact the grid. So, we recommend that I5 apply from the point of aggregation of 75 MW or more to a system element operated at 100 kV or more. Specifically, we feel it should be limited to the feeder bus and aggregating transformer.

Yes
Yes
Yes
No
There seems to be an implication that if a facility is determined to be BES, registration is required. Yet, the registration criteria already includes exclusion of users, owners and operators of the BES from registration, if they do not meet all the criteria. So, we fail to see why a special exclusion is necessary.
Yes
No
No.
Individual
Michael Falvo
Independent Electricity System Operator
No
We agree with the BES definition principles in general, the concept of Inclusions and Exclusions, as well as the proposal for an Exception Process. However, since the Exception Process and the Technical Principles and Criteria (TPC) for justifying BES Exceptions are being developed and will be approved independently, albeit concurrently with the BES definition, there is a risk that the revised definition may be approved while the TPC and Exception Process may not come to fruition in the form anticipated during development of the BES definition. In short, our support for any revised BES definition would be conditional to the establishment of the associated TPC. As such we advocate developing the revised BES definition and TPC as a “single package”. Thus, we do not agree with the blanket inclusion of generation units and Facilities meeting the thresholds of 20 MVA and 75 MVA respectively. We also do not agree with using these same thresholds in determining when Exclusions are applicable. Instead, we believe the impact on BES reliability of all generation units and Facilities meeting these capacity thresholds, should be assessed against the TPC and if found to be impactive, these units and Facilities should be included as part of the BES after going through the Exception Process. We believe this change in the approach to defining the BES will take into account the evolving reality of distributed generation, particularly in the context of radial systems and local distribution networks (LDNs), where generation units are installed in lieu of transmission reinforcements. We offer our further comments on the Definition and its Inclusions and Exclusions against the backdrop of this general philosophy. The BES definition refers to Reactive Power resources “connected at” 100 kV or higher as opposed to “operated at” 100 kV or higher. Is the intent of this wording to include in the BES a reactive resource (capacitor, reactor, etc.) operating at a voltage below 100 kV and connected to the BES via a step-up transformer? If yes, would the transformer be excluded from the BES to be consistent with Inclusion I1?
No
We agree with the concept of Inclusion I1. We suggest that since transformers with at least two windings greater than 100 kV are already part of "all transmission Elements operated at 100 kV and above" in the definition, and since inclusions I2 to I5 are commonly related to only generation, Inclusion 1 should be removed and replace by the following Exclusion: E(x) “Transformers that have a primary or secondary winding at less than 100 kV except for those included by I2 and I3”
No
We agree with the goal of inclusion of I2 but as stated earlier in our response to Q1, we do not support the blanket application of the BES definition to all individual generating units and Facilities meeting the respective capacity thresholds. Entities should be able to assess the impact of these units and Facilities against the TPC and use the Exception Process, with the help of technical evidence, to include generating units and Facilities that impact the interconnected grid and the bulk transfer of

power.
No
See our responses to Q1 and Q3.
No
This inclusion is extraneous given there is already a designation specific for system restoration covered by an existing standard to recognize their reliability impacts and to ensure their expected performance. NERC Standards EOP-005-2 stipulates the requirements for testing blackstart resource and cranking paths. This testing requirement suffices to ensure that the facilities critical to system restoration are functional when needed, which meets the intent of identifying their criticality to reliability. We therefore suggest removing Inclusion I4.
No
We agree with the goal of Inclusion I5 but have the same concerns expressed in our responses to Q1 and Q3. For the dispersed power resources referred to in Inclusion I5, we do not see the benefit of including the collector system, switchgear, associated medium voltage equipment and step-up transformer(s) in the BES. As before, these Facilities should be subject to assessment and included if found to impact BES reliability after going through the Exception Process. To reinforcing what was stated during the NERC BES webinar, we do not believe that the entire contiguous path has to be BES.
No
Again, we agree with the goal of E1 but we repeat the same concerns expressed in our responses to Q1 and Q3 with respect to the generation capacity thresholds. A majority of the transmission elements excluded by E1 would already be excluded by E3 and, therefore, E1 may be redundant. The SDT may wish to consider combining Exclusion E1 with Exclusion E3, modified as proposed in our response to Q9. In Exclusion E1, we suggest changing “automatic interruption device” to “automatic fault-interrupting device” for consistency with E3(a).
No
Again, we echo the same comments stated in our responses to Q1 and Q3. We do not agree with the Exclusion E2 for the very same reasons specified in responses to questions 3, 4, and 6. Additionally, we are not clear of the intent for the restriction stated in Exclusion E2 (ii).
No
Consistent with our earlier comments in response to Q1, we do not agree that an LDN should be characterized by a 75 MVA limit on the connected generation as described in part (b). It is expected that under various “green energy” programs that the development and implementation of distributed generation will grow considerably in the future. The 75 MVA generation limit may discourage this development of distributed generation (in general, it may discourage the installation of generation in lieu of transmission to supply load) because installing generation in an LDN would cause the entire LDN to be classified as BES and, as a result, subject the LDN to NERC planning standards that are inconsistent with well established jurisdictional planning criteria. To avoid subjecting the LDN to NERC requirements, the planning authority may elect to build generation outside of the LDN, which is undesirable because of increased transmission losses and reduced reliability. We suggest that (b) be deleted or revised in keeping with our earlier suggestions. We also suggest modifying Exception E3 (c) and (d) for consistency with language used in Technical Principles for Demonstrating BES Exceptions, since Bullet 1 recognizes that the system for which the exemption is being applied, may not be necessary for BES reliability and may experience power flows out to the BES under specified conditions. The suggested modified wording for E3 (c) and (d) is shown below: (c) Power is intended to flow only into the LDN: the total net Generation output within the LDN shall not exceed the total electric Demand of the LDN. (d) Not intended for use in transferring bulk power: While the LDN is intended to deliver power to load and not transfer bulk power between different locations in the BES, it is acceptable that under specified system conditions, bulk power transfers may take place between different points of the BES via the LDN, when it can be demonstrated that these power flows through the LDN are not necessary for maintaining BES reliability.
No
Small utilities may be impactive to the bulk power system and as such should not be subject to a carte-blanche exemption but should be subject to assessment and if necessary exclusions after going through the exception process. The outcome of the exception process may well be that such small

utilities can be excluded but this cannot be determined a priori. In addition, Exclusion E4 is worded very similarly to Exclusion E1. It is not clear what additional facilities will be excluded by E4 that are not already excluded by E1.
No
The existing definition and the associated inclusions and exclusions do not exclude local distribution facilities because the 75 MVA limit on generation within LDNs in E3 (b) will result in portions of the power system that are serving a distribution function being classified as BES. As stated before, we suggest subjecting the LDNs to assessment to determine their impact on the BES and including them if impactive by using the Exception Process.
No
At this point, we are not aware of conflicts for our own jurisdiction. However, NERC must exercise caution while developing the exception criteria and the associated processes as these may result in jurisdictional issues between state/provincial and federal entities. We repeat our earlier point that the BES definition and TPC must be developed and approved simultaneously to provide assurances that mechanisms are in place to exclude those Facilities from BES classification that are not impactive on the BES.
We have no other concerns with the definition but we believe a guide demonstrating the correct application of the definition under various transmission system configurations would be useful.
Individual
Randy MacDonald
NB Power Transmission
Currently, the posted exception criterion is only a concept with many gaps and TBD, as posted details are later to follow. The exception criteria should be a menu of technical items (load flows, stability analysis etc). Entities should be required to assess and provide their own justification under each category with a conclusion that takes into account all of the relevant items for element(s) under exception, in a consistent template and table of contents. Suggest the SDT to avoid specification of any parameters as they would differ under different design concepts, system configurations, system characteristics and regulatory requirements. An “all encompassing” comment is that the definition is too lengthy with an overly prescriptive exception process. The importance of the BES definition is recognized throughout the industry for its importance, and as such it should be simple, clear, and straightforward.
Group
National Association of Regulatory Utility Commissioners
Robin Lunt
No
The inclusion of individual generating units between 20 MVA and 75 MVA nameplate capacity is inconsistent with I3 that sets the aggregate threshold at 75 MVA. There is no technical justification for including a facility as low as 20 MVA and no rational basis for thinking that these generators could be

the cause of instability, uncontrolled separation, or cascading events. We recommend removing this inclusion or raising the threshold to 75 MVA.
Yes
We agree with Exclusion E1. Radial systems are clearly local distribution and excluded from FERC and NERC jurisdiction. This is consistent with FERC Order 743 and 743a (see e.g. Order 743A P 1, 76 Fed. Reg. 16264 (March 23, 2011)). We suggest that I2 be removed from this exclusion (and from the standard as a whole) as discussed in response to question 3.
Yes
Yes
Exclusion 3 is essential for the standard to conform to Federal Power Act Section 215 that clearly excludes local distribution from FERC and NERC jurisdiction. The exclusion properly recognizes that local distribution can operate at above 100 kV. This exclusion seems to reflect the essence of the Seven Factor test from FERC's Order 888. Although FERC Order 743A did not bind NERC to the Seven Factor test, it makes sense to pursue consistency between these tests.
The standard as currently written seems to exempt most local distribution from NERC and FERC reliability standards. Section 215 of the Federal Power Act requires such exemptions. There remain some outstanding concerns, however. For example, earlier comments from NERC staff have suggested that the BES needs to be contiguous. If the definition were to require continuity, it would likely sweep in many local distribution facilities that should not (and cannot under the statute) be included in the BES definition.
Congress clearly recognized that State utility commissions are concerned about and committed to reliability at the distribution level; that's why Congress explicitly limited FERC's reach, and directed FERC not to attempt to regulate facilities used in local distribution. The NERC standard setting process for defining the Bulk Electric System must respect the statutory limitations under Federal Power Act Section 215 that explicitly excluded local distribution from the definition of the Bulk Power System (BPS). The Bulk Electric System, while not necessarily equivalent to the BPS (See FERC Order 743 A P 102), cannot exceed the limitations of the BPS and cannot include facilities used in the local distribution of electric energy. State Utility Commissions are concerned about and committed to reliability. These Commissions are in the best position to provide reliability oversight and standards for the local distribution system in their State.
Individual
Glen Sutton
ATCO Electric
While we agree generally with the inclusion, we have some questions based on specific examples: 1. A load substation has two 144/25kV transformers that connects to two separate 144kV transmission lines (i.e. two separate 144kV buses). However, the two transformers joins on one 25kV bus. Should these two 144/25kV transformers be part of BES? 2. A protection relay is on 72kV side of a 144/72 tie transformer and its purpose is to remove 72kV weak source (i.e. trip 72kV breakers) during 144kV bus fault. Should this protective relay be included in BES? 3. According to Inclusion I1, a 144/25kV transformer is not a BES element. The transformer's 144kV side has a Motor Operated Disconnecting Switch (MOD), and this MOD connects to one or two 144kV line breakers. The transformer's protections trip the 144kV line breakers. Should the transformer protection systems be part of BES?
If a generator connects to 2 back to back transformers (25kV/72kV and 72kV/144kV), which transformer is GSU? 25/72kV transformer only or both transformers.

Is a load substation categorized as a "radial substation" if its 144kV bus connects to another 144kV bus at an adjacent substation via two 144kV parallel transmission lines?
Individual
David Burke
Orange and Rockland Utilities, Inc.
In the core definition, “the list shown below” is still not clearly defined and causes some confusion.
Yes
No
: X I2 should pertain to individual generating unit impact to the Bulk system, rather than the size unit only. Oftentimes there are cases when neither the path nor a 20 MVA unit itself will have any impact on the reliability of the interconnected transmission network, nor is it necessary for its operation.
No
X I3 should pertain to multiple generating units impact to the Bulk system, rather than the size unit only. Oftentimes there are cases when neither the path nor a 75 MVA unit itself will have any impact on the reliability of the interconnected transmission network, nor is it necessary for its operation.
No
See comments from question 4.
Yes
Yes
It was mentioned that Cranking Paths of Blackstart Resources are defined as BES. How about the path(s) of generation units that will be deemed as BES? Please clarify.
Individual
Shane McMinn
Golden Spread Electric Cooperative, Inc.
Yes
Yes
Yes
Yes
Yes

Yes
No
We recommend modifying "Any radial system which is described as connected from a single Transmission source originating with an automatic interruption device and..." to read EITHER 1. "Any radial system which is described as connected from a single Transmission source and... [remove originating with an automatic interruption device] OR 2. "Any radial system which is described as connected from a single Transmission source originating with an automatic interruption device or manual isolating switch..."
Yes
Yes
No
Suggested revision: Transmission Elements, from a single Transmission source connected at a voltage of 100 kV or greater, owned by a small utility whose connection(s) to the BES is(are) solely through this(these) single Transmission source(s), and without interconnected generation as recognized in the BES Designation Inclusion Items I2, I3, I4, or I5. The intent of the revision is to exlude a small utility with multiple radial connections to BES elements owned by others.
No
All load serving radials need to be excluded from the BES.
No
Individual
Rick Spyker
AltaLink
Yes
We agree with the concept of a bright-line definition and commend the SDT for developing a concept of explicit inclusions and exclusions as part of the definition. This will reduce the number of exception applications for some of the BES elements. However, the inclusion and exclusion requirements are extremely restrictive. For example, radial characteristics should not be limited by the amount of installed generation or single transmission source and/or require an interrupting device. Instead we believe that one or more transmission sources could feed the radial load to provide redundancy as long as there is adequate protection and isolation for improved customer-supply continuity and reliability. This should be considered radial as long as the loss of any transmission source does not affect, and is not necessary for, the operation of the interconnected transmission network. We suggest the SDT and RoP teams should: • Carefully craft the exception criteria and procedure to be flexible and technically sound, to allow entities to adequately present their case to the ERO for inclusions or exclusions outside of the definition. • Include provisions in both the NERC exception criteria and exception process for federal, state and provincial jurisdictions. These provisions should provide clear guidance so that, if and when there are deviations from the exception criteria, they are properly identified with technical and regulatory justifications ensuring there is no adverse impact on the interconnected transmission network. This burden of proof should be left to the entity seeking exception because it may be difficult if not impossible to define the exception criteria. Further, if such an explicit criteria could be defined, it will in fact become another bright-line BES.
Yes
We agree with the concept of Inclusion I1. However, we suggest that since transformers are already covered by the definition, "all transmission Elements operated at 100 kV and above", and since Inclusions I2 to I5 are commonly related to generation only, Inclusion I1 should be removed and replaced by the following Exclusion: E(x) "Transformers not used as Generator Step-Up (GSU) transformers that have primary or secondary winding at less than 100 kV." We also suggest the SDT to put forward a high-level exception criteria with key menu items of assessment that can be followed continent-wide by entities to put forward their exception for element(s) mentioned in Inclusion I1, or

any other inclusion(s). These inclusion(s) that are intended for exemption would be based on the entity's technical assessment, evidence and justification for its unique characteristics, configuration, and utilization.
No
We agree with the concept of Inclusion I2 with respect to individual generating units, but do not support having the entire path labeled as BES. In most cases, neither the path or a 20 MVA unit itself will have any impact on the reliability of the interconnected transmission network nor is it necessary for the operation. Generation restriction (20 MVA or 75 MVA) should either be revised or the exception procedure should allow entities, with the support of technical evidence, to exclude element(s) from being labeled as part of the BES. The path to generating facilities does not need to be BES contiguous. Generating units can be required to be planned, designed, and operated in accordance with a subset of NERC Standards, but should not require a contiguous path unless the unit is identified essential for the operation of transmission network. Definition and/or exception process should provide clear acknowledgement and flexibility to avoid any regulatory conflicts.
No
We agree with the concept of Inclusion I3 with respect to multiple generating units located at a single site, but do not support that the entire contiguous path has to be BES. The path of a 75 MVA plant or aggregated generation will rarely have any impact on the reliability of the interconnected transmission network nor is it necessary for its operation. Generation restriction (75 MVA) should either be revised or the exception procedure should allow entities, with the support of technical evidence, to exclude element(s) being labeled as part of BES. Path to generating facilities need not be BES contiguous. Generating units can be required to be planned, designed, and operated in accordance with a subset of NERC Standards, but should not require contiguous paths.
No
We do not agree with Inclusion I4. Blackstart resources and transmission facilities on the cranking path should not be classified as BES regardless of size and voltage level. From a regulatory perspective, such an inclusion would be in conflict with the current regulatory requirements in many of the jurisdictions. More importantly, designating these facilities as BES Elements or Facilities beyond the 100 kV bright line, the 20 MVA/unit or 75 MVA/plant criteria, without a regard to their impact on the BES (under conditions other than system restoration) will impose unnecessary requirements for these facilities, which do not contribute to reliability under interconnected operation conditions. For restoration condition, this inclusion is extraneous given there is already a designation specific for system restoration covered by an existing standard to recognize their reliability impacts and to ensure their expected performance. NERC Standards EOP-005-2 stipulates the requirements for testing blackstart resource and cranking paths. This testing requirement suffices to ensure that the facilities critical to system restoration are functional when needed, which meets the intent of identifying their criticality to reliability. While we do not disagree with the SDT's interpretation of the FERC directives, the BES definition should cover those facilities that are needed for operation under both normal and emergency conditions, which includes situations related to black-start and system restoration. We do not agree that the directives specifically ask for inclusion of blackstart resources and facilities on the crank path in the BES definition. We believe the requirements in EOP-005-2 suffice to address the SDT's interpretation and concern regarding recognition of the reliability impacts and requirements for blackstart resources and facilities used for system restoration. Generating units of any size and transmission facilities of any voltage level may be used for blackstart and restoration. Conceivably, a generator of 10 MW and transmission facilities of 44 kV or 69 kV may be a part of the cranking path. A BES inclusion will then subject these generators and facilities, which are essentially "local" facilities but called upon to begin restoring its bulk interconnected counterpart, to comply with the reliability standards intended for maintaining BES reliability. Included in the BES definition will thus discourage smaller generators from providing blackstart capability, and the transmission facilities from being a part of the cranking path. This may also discourage Transmission Owners and Operators from identifying multiple blackstart resources and cranking paths to provide restoration flexibility. Such an inclusion will ultimately undermine reliability. If indeed any of these facilities are deemed necessary to support bulk power system reliability at times other than system restoration, they would/should have been identified through the basic BES definition and inclusion list or can be addressed through the exception procedure. We suggest and urge the SDT to drop I4 on the basis that: • The availability and performance expectations of blackstart resources and facilities on the cranking path are already specifically addressed in an existing standard; and • Unless they meet the BES definition and the

other inclusion criteria, they do not have any perceived reliability impact on everyday operation of the BES.
No
We agree with the concept of Inclusion I5 but do not support that the entire contiguous path has to be BES. The path or aggregate generation will rarely have any impact on the reliability on the interconnected transmission network nor is it necessary for its operation. These are generally referred to as connection facilities.
Yes
We agree with this concept as part of establishing a bright-line definition, as well as clarifying this exclusion as part of the revised BES definition. Although the concept is consistent with the statements in the FERC Order, it is imperative to understand that the limitations of E1 will have a direct impact on many entities (big and small) along with distribution companies across North America. The exclusion requirements are extremely restrictive with little or no technical basis and are limited to the fact that these parametric restrictions may not have any reliability impact in terms of location, configuration of element, and system characteristics. The radial characteristics and/or the reliability of the interconnected transmission network is determined by the amount of installed generation or a single transmission source or an interrupting device. Accordingly, it will be an understatement to suggest that the SDT: • Carefully craft the exception criteria and procedure that is flexible and technically sound to adequately allow entities to present their case to the ERO for exclusion • Exception criteria should be at a high-level with key menu items of assessment that can be followed continent-wide by entities to put forward their exception for element(s) mentioned in exclusions or inclusions based on technical assessment, evidence and justification for its unique characteristics, configuration, and utilization • Acknowledge and provide provisions in both NERC exception criteria and exception process for federal, state and provincial jurisdictions.
Yes
We agree with most of the changes in Exclusion E2. However, we feel there is a need for evidence or technical study in regards to the limits described in I2 & I3. The real net aggregated power seen by the bulk power system at the interconnection, with the outlook of distributed generation systems, may be different than past experience. Hence it requires to be reassessed based on technical studies with respect to the future integration of DG's. To establish a bright-line definition, E2 exclusion may be acceptable if the SDT provides adequate provisions within the exception procedure. Accordingly, we suggest the SDT carefully craft the exception criteria that will allow entities to present their case to the ERO for exclusion from E2 requirements.
Yes
We agree with this concept as part of establishing a bright-line definition along with this clarifying exclusion in the revised BES definition. However, requirements in Exclusion E3 are restrictive and we do not agree to the limits on connected generation for Local Distribution Networks (LDN), described in part (b). The development and implementation of distributed generation will grow considerably in the future and will operate together with conventional sources of energy. The real net aggregated power of distributed generation seen by the bulk power system at the interconnection may be larger than past experience; hence it requires to be reassessed based on technical studies with respect to the future integration of DG's. We suggest and urge the SDT to carefully craft the exception criteria & procedure that is flexible and technically sound to adequately allow entities to present their case, and/or unique characteristics of the elements under exception to the ERO for exclusion.
No
Small utility or distribution provider is a relative term. A smaller distribution provider may have an impact on the transmission network while a large one may not; this is based on their design, configuration and protection. Hence, such an exception should apply regardless of the size of an entity. Having said that, the concept discussed here is to define a radial system and not a small utility, as mentioned in the FERC Order. We do not believe that the SDT had sufficient discussions while crafting the proposed exclusion in regards to small utilities. The language used in the proposed clause is only appropriate to establish a bright-line definition for a radial system. It is worth noting that many small utilities (and individual load customers or generation connections) would have more than a single transmission source with a solid tap and, at the same time, be adequately protected and effectively isolated without any adverse impact on the transmission network. Such a practice and design is widely used across North America. Hence, we do not agree that this exclusion is an attempt

to address the issue of small utilities. The definition and inclusions will force many small entities, load customers and generation unit owners to act and register as Transmission Owners. In some parts of the continent this would be in conflict with state or provincial regulatory act, Codes and Licenses. Consistent with the FERC Order, the ERO and the SDT should be aware of these conflicts and should not ignore them for later. Hence, we suggest the ERO and the SDT address this by providing explicit but simple provisions in the exception procedure by considering sound technical exception criteria that is flexible based on demonstration of evidence to justify the element's necessity for operation. Regulatory Acts and Rules will always trump NERC requirements and hence we suggest that the only evidence that should be required of small utilities/entities is: • Regulatory evidence • Evidence demonstrating that NO adverse reliability impact is afflicted on the interconnected BES because of their connection.
No
We commend the SDT for their concept in putting forward a 100kV BES bright-line definition. However, we do not believe that the current definition drafted by the SDT has differentiated between Transmission and Distribution or excluded distribution facilities from the BES, or addressed the issue of local distribution facilities above 100kV. We believe that the ERO and SDT can address this by providing explicit but simple provisions in the exception criteria (to be used by exception procedure) by putting forward a menu of key technical assessments , which are based on demonstration of evidence to justify the element's necessity for operation. For example, we suggest that for local distribution, the evidence that should be required is: • Regulatory evidence • Evidence demonstrating that NO adverse reliability impact is afflicted on the interconnected BES because of their connection We suggest that the exception criteria should ONLY list a menu of items and a prescribed report template that should be assessed and presented by an entity as their evidence and justification for exception to a RE, the ERO and any relevant regulatory authority. This evidence and justification would be used by the ERO as part of its decision making process.
Yes
We believe that the concepts of inclusions and exclusions as part of the bright-line definition are excellent. However, these exclusions do not address several directives in Order No. 743 and 743A, such as: differentiation between Transmission and Distribution, non-jurisdictional concerns, or distribution. We believe that the BES definition itself is not a venue to address these concerns but suggest that these issues should be explicitly addressed by the ERO's exception criteria and exception process. Currently, the posted exception criterion is only a concept with many gaps and TBD, as posted details are later to follow. We suggest that the exception criteria should be a menu of technical items (load flows, stability analysis etc) and non technical items (type of loads such as distribution companies vs. major city center, national security etc). Entities should be required to assess and provide their own justification under each category with a conclusion that takes into account all of the relevant items for element(s) under exception, in a consistent template and table of contents. We suggest the SDT to avoid specification of any parameters as they would differ under different design concepts, system configurations, system characteristics and regulatory requirements.
Group
ACES Power Participating Members
Jason Marshall
Yes
Yes
We agree with limiting transformers to bulk power transformers and not including step-down or distribution transformers. Some regions have been enforcing standards on protection equipment that is on the low-side of these step-down or distribution transformers. Additional language further clarifying that this low-side protection equipment is not part of the BES should be added to for consistency across regions. Additionally, the drafting team might consider using the terms primary and secondary rather than windings. Otherwise, autotransformers which have a sing
Yes
Yes

No
Blackstart resources are rarely used. For many reasons, restoration almost always starts with synchronizing to other systems (the Interconnection) that are already intact. Because Blackstart Resources can actually be on the distribution system, the distribution system can then become subject to the enforceable standards. This results in significant increased costs in tracking compliance for these distribution systems without a commensurate increase in reliability. Because a Blackstart Resource must be included in the Transmission Operator's restoration plan, this creates a perverse incentive to un-designate the Blackstart Resource that is on a distribution system to avoid the distribution system becoming part of the Bulk Electric.
Yes
Yes
Yes
Yes
Yes
Yes
No
It is not clear if E1 covers networked sub-transmission. Consider the situation where a 138 kV line terminates into a 138/69 kV transformer, the 69 kV is networked and only serves load and possibly generation that does not meet any of the inclusion criteria. This is a situation that appears to meet the intent to exclude radial load under E1 and local distribution networks under E3 but does not appear to explicitly meet either criteria. E1 is not met because the 69 kV network is not radial and E3 is not met because it specifically limits the exclusion to 100 kV and above. This issue could be solved by making clear that E1 applies to even networked sub-transmission or by removing the voltage limit on E3 so that sub-transmission could be included within this exclusion criterion.
Group
SERC OC Standards Review Group
Jim Case
Yes
The SERC Standards Review Group (SRG) still believes that 200KV is the correct bright line for the BES definition
Yes
No
SERC proposes the following as an alternative to the Inclusion I2 wording in the draft BES definition: "Individual generating units greater than 20 MVA (gross nameplate rating) including the generator terminals through its GSU which has a high side voltage of 100 kV or above." The only difference in proposed text is that the word "the" preceding "GSU" has been changed to "its". The text in the draft clearly defines that the inclusion begins with the generator, continues through the terminals, and ends at a GSU. The wording in the draft text does not, however, explicitly limit the scope of equipment that should be evaluated for inclusion to the GSU which is directly connected to the generator terminals. Since GSU is not a defined term there is a strong potential for inconsistent interpretation of this boundary to include multiple transformers in series until ultimately a transformer which does operate at a voltage of greater than 100 kV is included in the flow path. To eliminate this potential for compliance re-interpretation, we also strongly suggest the term GSU be defined in the NERC Glossary of Terms . A suggested definition is: "Generator Step-up Transformer (GSU) should be

defined as a transformer directly connected to a generator on the low side and to a bus on the high side."
No
"Multiple generating units located at a single site with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) including the generator terminals through the GSUs, connected through a common bus operated at a voltage of 100 kV or above." GSUs need to be defined – see response to question 3 above.
No
"Blackstart Resources and the designated blackstart Cranking Paths identified in the Transmission Operator's restoration plan regardless of voltage." The SERC SRG is concerned that this provision may have the effect of incenting transmission operators to limit the available generator options to the minimum necessary for a reliable option as opposed to every possible option that might be utilized in a pinch. We recommend the following adjusted language: "Essential Blackstart Resources and the designated essential blackstart Cranking Paths identified in the Transmission Operator's restoration plan regardless of voltage"
Yes
No
This exclusion is acceptable if the suggestions in Questions 3 and 4 are incorporated. We also suggest modifying Exclusion E1a as follows: a) Only serving Load or only connecting to a transformer stepping down to a voltage below 100kv. A normally open switching device between radial systems may operate in a 'make-before-break' fashion to allow for reliable system reconfiguration to maintain continuity of electrical service. Or,
No
This exclusion is acceptable if the suggestions in Questions 3 and 4 are incorporated.
No
"b) Limits on connected generation: Neither the LDN, nor its underlying Elements (in aggregate), includes more than 75 MVA generation;" The SERC SDT believes you intended to grant exception E2 in this case; however, it is not explicitly identified "c)Power flows only into the Local Distribution Network: The generation within the LDN shall not exceed the electric Demand within the LDN;" Is this intended for each hour of the year or is it possible for some hours that generation may exceed load? This needs to be clarified.
No
We suggest that our comments to Question 3 and Question 4 be incorporated. We also question whether this is going to have an unintended consequence of requiring Distribution Providers to register that otherwise wouldn't have to register because some technical aspect has not been included in this exception.
Yes
Exception E4 potentially does have issues – see our response to Question 10.
No
No other concerns "The comments expressed herein represent a consensus of the views of the above named members of the SERC OC Standards Review group only and should not be construed as the position of SERC Reliability Corporation, its board or its officers."
Individual
Benjamin A Friederichs
Big Bend Electric Cooperative, Inc.
No
As a general matter, BBEC supports the approach the Standards Development Team ("SDT") has taken to defining the Bulk Electric System ("BES"). The changes made in the revised core definition are helpful and represent significant progress toward an acceptable definition. With an effective and efficient exclusion process, the draft will better define the BES as a whole. We urge the SDT to bear in mind the restrictions contained in Section 215 of the Federal Power Act ("FPA") The "bulk-power

system" (As per FERC, we treat the statutory term "bulk-power system" as equivalent to the term ordinarily used in the industry, "Bulk Electric System") definition imposes a clear limit on the reach of the mandatory reliability regime. The BES is made up of only those "facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)" and "electric energy from generation facilities needed to maintain transmission system reliability." Congress reinforced that limit in Section 215(i), where it emphasized that the FPA authorizes the imposition of reliability standards "for only the bulk-power system." We're concerned that the SDT's proposed definition is overly-broad, and that it will sweep in many Elements that have little or no material impact on the reliable operation of the interconnected bulk transmission grid. For example, the definition uses the arbitrary 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators. Accordingly, for the BES definition to conform to the requirements of the statute, the SDT must adopt an effective mechanism to exempt facilities like these that are improperly swept in by the SDT's brightline approach to inclusions and exclusions. For this reason, the Exception process to accompany the SDT's definition is of critical concern. If the SDT incorporates this statutory language as its core definition, it will have addressed FERC's primary concern with a minimum of disruption to the current NERC system of definitions. The definition could then be further elaborated to show specific points of demarcation for each inclusion and exclusion similar to that Proposal 6 from the WECC Bulk Electric System Definition Task Force ("BESDTF") team to further delineate BES and non-BES facilities.

No

In concept, we support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. In this regard, we note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams noting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort. Also, the reference to "two windings of 100 kV or higher" may create some confusion because many three-phase transformer banks have 6 or 9 windings, depending on whether the transformer has a tertiary. We suggest clarifying this provision by changing the clause reference two windings to read: "the two highest voltage transformer windings of 100 kV per phase that are connected to the Bulk Electric System." We again urge the SDT to consider further delineation of points of demarcation similar to WECC BESDTF Proposal 6.

No

BBEC is concerned that I2 inclusion criteria that includes the arbitrary 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators is over-inclusive. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted improperly expands the BES definition to include generators that the statute requires to be excluded. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at this level in order to be reliable." Unfortunately, the SDT appears to have concluded that any interconnection facility operating above 100-kV should be classified as BES. The result will be to require Generation Owners to register as Transmission Owners/Operators, as well, producing substantial additional compliance costs for those Generation Owners but resulting in little or no improvement in the reliability of the BES. We recommend that the SDT, like the Project 2010-07 SDT (commonly referred to as the GO/TO Team), give careful consideration to the practical results of its recommendations rather than relying on abstract conclusions about whether a "contiguous" or "non-contiguous" BES is more desirable. We are concerned that the SDT's pursuit of a "contiguous" BES will result in a substantially over-inclusive BES definition. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. NERC's Standards Drafting Team for Project 2010-07, has already considered this question and, based on an in-depth review of potentially applicable reliability standards, has concluded that generation interconnection facilities, even if operated above 100-kV,

need to comply only with a limited set of reliability standards in order to achieve the reliability goals. Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability.
No
BBEC is concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition.
Yes
Including "all" blackstart and blackstart cranking paths in the BES may ultimately provide an incentive to the electric industry to reduce the number of resources with blackstart capability. We therefore suggest that essential blackstart resources identified by the Regional Entity should be included in the Bulk Electric System, but non-essential blackstart resources need not be.
No
BBEC agrees that it is important to address wind generation facilities and similar generation facilities in which a large number of generating units, each with a relatively small capacity, are clustered and fed into the grid at a single interconnection point. That being said, we are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
Our only concern about this exclusion is the timeframe we'd have to get an appropriate automatic interruption device installed. Currently, we have a short radial that hasn't yet caused us to be registered as a TO or TOP. Having time to get a solution in place would be crucial for us, as a small utility, to avoid additional regulatory fees and requirements.
No
As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold (through reference to Inclusion I2) lacks an adequate technical justification in this context. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit ("standby, back-up, and maintenance power…") should be eliminated.
BBEC strongly supports the categorical exclusion of Local Distribution Networks from the BES. In fact, for reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are, of course, probably the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. BBEC supports the LDN exclusion, but we believe the exclusion should be refined in the following respects: • The SDT's draft states that: "LDN's are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load." (emphasis added) We recommend that the SDT revise the sentence quoted above as follows: "LDN's are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load and not to accommodate bulk transfers of power across the interconnected bulk system." By instituting this suggestion, the SDT would emphasize the key difference between an LDN, which is designed to reliably serve local, end-use retail customers, and the BES, which is designed to accommodate bulk transfer of power at

wholesale over long distances.
BBEC supports the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that can ill afford the substantial costs that accompany imposition of mandatory compliance with reliability standards. Further, we agree that the small utilities covered by the exemption will have no measurable impact on the operation of the interconnected BES. In the Pacific Northwest, many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid.
No
While BBEC agrees that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing most local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed at greater length in our answer to Question 1, BBEC believes that the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES. As discussed in our answer to Question 3, BBEC notes that exclusion of facilities from the BES does not mean that owners of those facilities are entirely exempt from reliability standards. On the contrary, the statute provides that "users" of the BES can be subject to reliability regulation. Hence, even where an entity does not own BES assets, it could be required to, for example, provide necessary information to the applicable Reliability Coordinator and to participate in the regional Under-Frequency Load Shedding program by setting the UFLS relays in its Local Distribution Network at the appropriate settings. We note that participants in the WECC BESDTF Task Force generally agreed that appropriate information should be provided by non-BES entities, although there was considerable concern related to ensuring that the provision of information was not unduly burdensome.
Yes
The Exceptions process is a necessary part of making this proposal complaint with the Federal Power Act. As noted in our responses to Question 1 and Question 11, we believe the basic SDT proposal is potentially in conflict with the limitations of the Federal Power Act, and in particular the statutory exclusion for facilities used in the local distribution of electric energy. The SDT's approach can meet the statutory requirements only if the Exception process currently under development results in facilities that are not properly classified as BES being exempted from regulation as BES facilities.
BBEC has these additional concerns: The current definition provides that "Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process." BBEC is concerned that the SDT carefully delineate which entity has the burden of proof in the exclusion process. The WECC BESDTF approach, which we commend to the SDT, laid out these burdens in some detail. Under that approach, essentially, if a facility is excluded from the BES by virtue of the specific exclusions listed in the definition, the Regional Entity bears the burden of proving that the facility nonetheless has a material impact on the interconnected bulk transmission system and therefore should be included in the BES. On the other hand, if a facility is classified as BES by virtue of the list of inclusions set forth in the BES definition, it can still escape classification as BES, but bears the burden of demonstrating that its facility has no material impact on the interconnected transmission system. We urge the SDT to give careful consideration to these burden-of-proof questions and to follow the lead of the WECC BES Task Force. For the reasons we have explained in our answer to Question 11, we believe the Exception process is critical both to ensure that the BES definition is effective in producing measurable gains to bulk system reliability and to ensuring that the definition will comply with the limitations Congress placed in Section 215. Hence, we believe the entire BES definition, including the Exception process and related procedures, should be vetted through the NERC Standards Development Process, including the full comment periods and a ballot approvals provided for in that process. We are concerned that important elements of the BES definition have been assigned to the Rules of Procedure Team, and that changes in the Rules of Procedure are subject to approval in a process that provides considerably less due process and industry input than the Standards Development Process. Accordingly, we urge that all elements of the BES definition, including those elements that have been assigned to the Rules of Procedure Team, be vetted through the Standards Development Process.
Individual

J. McFeely, PE
Modern Electric Water Company
Yes
Taken by itself, the proposed core definition directly accomplishes the following: i) it re-affirms the 100kV bright-line and ii) it removes Regional discretion to define the BES. However, the language continues to inject ambiguity in that it introduces the use of the separately-defined capitalized term “Transmission”. In NERC’s Glossary of Terms (May 24, 2011), “Transmission” is defined in terms of function rather than voltage. Strictly interpreted, the core definition implies that only Elements used for the transfer of energy to points where it transformed for delivery to customers as well as certain resources are considered to be included in the BES. Under this viewpoint, there exists a two-stage qualifier for non-resource Elements – namely that it must first be used for Transmission and not for “Distribution”, and secondly, that it be operated above 100kV. Rather, the BES cannot contain Elements used for “Distribution” (a term not explicitly defined, but extrapolated from other NERC glossary terms to mean the “wires” between the transmission system and the end-use customer, and NOT defined by voltage). If this is the case, the SDT has established that an Element’s function is equally important to its voltage, and has simultaneously excluded all Transmission Elements under 100kV – even if used for bulk transfers. While the Exclusions detail characteristics of specific distribution-like Elements, we suggest that the core BES definition contain language explicitly excluding Distribution (there are Elements that are neither qualifying radials as defined in E1 nor local distribution networks as defined in E3).
Yes
The use of “terminals” rather than “windings” might be more clear.
Yes
Clear exclusionary language for radial systems is absolutely necessary for a usable BES definition, particularly since radial systems serving load are already excluded from the existing NERC definition, radial systems serving load can only be used for the local distribution of energy (and are thus excluded by Congress in Sec. 215 of the FPA), and radial systems serving load have been confirmed excluded from the BES by previous FERC Orders. However, the proposed language could be improved to be more explicit and further remove the opportunity for improper/unintended interpretation. The currently-drafted E1 language has several issues that need to be addressed. For instance: The use of “automatic interruption device” in E1 is not consistent with “automatic fault interruption device” in E3-a, and could lead to different interpretations. Another issue is the use of the un-clarified phrase “single Transmission source”, and deserves additional attention. Presumably, this language exists to describe the commonly-used radial tap from a networked (two-station) line, as detailed in NERC Project 2009-17-Response to Request for an Interpretation of PRC-004-1 and PRC-005-1 for Y-W Electric and Tri-State G&T. In Project 2009-17, diagrams show a radial tap placed on a line between Station A and Station B, and could be interpreted to indicate that the tap connects to two sources. Unless “single Transmission source” is clarified, then a radial line originating from a Double-Bus-Double-Breaker or a Breaker-and-a-Half station would also connect to two sources. The drafted language does not go far enough to consider how networked lines are operated – sometimes radially, sometimes with multiple protection and isolation schemes and equipment. As drafted, this exclusion cannot be utilized by many insignificant taps (some of such insignificant length that no automatic fault interrupting device was deemed necessary). This situation leaves those insignificant elements to apply the LDN exclusion whose characteristics are dissimilar to a simple, load-serving radial tap. We support the intent of the language of E1-a, “A normally open switching device between radial systems may operate in a ‘make-before-break’ fashion to allow for reliable system reconfiguration to maintain continuity of electrical service….”, but suggest that it be re-written as follows: “The existence and use of ‘make-before-break’ switching devices, which temporarily connect otherwise radial load-serving systems to alternate sources for purposes of service continuity, do not affect the BES status of the system before, during, or after their use.” This clarification is needed to address a position held in the WECC region (WECC Compliance Bulletin #4, April 15, 2011) that make-before-break switches render systems part of the BES, and discourage distribution providers from “reliably” serving their

customers. We do not intend to air grievances, but ambiguous radial exclusion language has led to an extreme misuse of resources in the WECC region. It is imperative that industry and the SDT get this exclusionary language correct and put into use as soon as possible. In an explanatory bullet below Exclusion E1-c (herein) the SDT states “The SDT believes that faults on radial lines without protection devices could negatively impact the BES.” Where this reasoning errs is that it assumes that everything upstream of a radial element is already determined to be BES. Many radial taps connect to LDN lines without AFIDs. The language proposed does not allow for a radial exclusion directly, but forces the insignificant tap to apply the LDN exclusion E3 – E1’s success at being complete depends on another exclusion. Additionally, this reasoning implies that the mere existence of a AFID is the cure-all to reliability or that technical analysis hasn’t already established the proper balance of equipment to adequately serve and protect these elements. We suggest including additional isolation devices as the demarcation point of small radial systems wishing to apply this exclusion.

Yes

Similar to our Question #7 comments regarding radial exclusions in E1, a usable BES definition excluding local distribution networks (LDNs) is needed to allow this industry to focus on and conduct business in a fashion that promotes reliable and efficient system operation. In line with a 1/18/2011 Executive Order directing federal regulatory agencies to base their practices on science and to consider costs, excluding LDNs from the BES definition would achieve that aim on a national scale. While differing only in connectivity, LDNs operate and function exactly as radial systems. We suggest modifying the second and third sentences of E3 as “LDNs are normally operated such that they are connected to the BES through more than one AFID simultaneously, and exist to promote the level of service to Loads as commonly defined by states’ utility commissions. For a System to be characterized as an LDN, it must meet all of the following:” Sub-bullet E3-c should be clarified to indicate conditions, timeframes and metrics used to demonstrate power flow direction. We support the intent of the remaining sub-bullets.

No

The BES definition has already had a significant economic (and operational) impact on a substantial number of small entities and those small entities have not adversely impacted the reliability of the BES. The Commission (and the SDT) should also consider the other side of the coin - an improved BES definition could have a positive impact on a significantly greater number of small entities than it will negatively impact small entities otherwise not currently registered. Crafting exclusions properly with industry suggestions should limit the small number affected by this proposed definition. Additionally, we point out that in one instance the SDT states that the BES definition does not address registration or the applicability of standards, yet in another instance is concerned what impact the definition will have on an entity’s possible registration status. We don’t believe you can have it both ways or continue to keep one’s proverbial head in the sand any longer. We understand the SDTs scope is to provide a USABLE definition of the BES, but also understand that its intent is two-fold: 1) to correct what the Commission believes is a gap in reliability due to regional discretion, and 2) to remove ambiguity in what constitutes the BES so that industry can focus on and conduct business in a fashion that promotes reliable and efficient system operation and so that the RROs can implement their CMEPs. This second point is absolutely related to registration and the applicability of standards, and shouldn’t be ignored. As drafted, Exclusion E4 still would not allow for the exclusion of ALL small utilities that may inadvertently be included in the BES based on the currently-drafted definition, even though they are, indeed, small utilities that should be excluded from the BES. It appears that the SDT is struggling with the idea that the BES definition should properly evaluate every single element in North America by itself. We believe this is why the term “generally” was used in NERC’s Statement of Compliance Registry Criteria (SCRC), and why the issue of the BES definition presently in front of the SDT cannot be entirely separated from registration and applicability of standards. If the SCRC will not be examined and modified similarly as the NERCs Rules of Procedure, then the BES definition must include some “grey area deference” for small utilities such as is the intent of E4. If it is the intent of the definition to exclude most small utilities from the BES, then exclusions should be granted based entirely on the definition. Otherwise, as the SDT correctly states, the RoP-based exclusion process will be flooded and ineffectual. As stated in the SCRC, the definition will initially identify those necessary, but still allows for refinements later. The SCRC utilizes NERC’s approved definition of the BES, and will be “improved” by this BES definition. Therefore, craft E4 with language that does not limit its intent to exclude small utilities from the BES. Do not use metrics already used in other exclusions. Do not

reference registration requirements in exclusions that comprise the definition of the BES – the BES should not be defined in terms of registration criteria. In Order 743, FERC defines a small utility in terms of an entity's annual MWhs sold. Consider aligning NERC's and FERC's definitions similarly.
No
The proposed definition continues to inject ambiguity in that it introduces the use of the separately-defined capitalized term "Transmission". In NERC's Glossary of Terms (May 24, 2011), "Transmission" is defined in terms of function rather than voltage. As it should, the core definition implies that only Elements used for the transfer of energy to points where it is transformed for delivery to customers as well as certain resources are considered to be included in the BES. However, it also uses voltage, and we do not believe that the proposed definition goes far enough to distinguish between T and D. Under the language of the core definition, there exists a two-stage qualifier for non-resource Elements – namely that it must first be used for Transmission and not for "Distribution", and secondly, that it be operated above 100kV. Rather, the BES cannot contain Elements used for "Distribution" (a term not explicitly defined, but extrapolated from other NERC glossary terms to mean the "wires" between the transmission system and the end-use customer, and NOT defined by voltage). While the Exclusions detail characteristics of specific distribution-like Elements, we suggest that the core BES definition contain language explicitly excluding Distribution (there are Elements that are neither qualifying radials as defined in E1 nor local distribution networks as defined in E3). Section 215(a)(1) contains specific language that could be used in the core definition in this instance.
Yes
Exclusion E1 and WECC Compliance Bulletin #4 (April 15, 2011) conflict. We support the intent of E1 and have provided suggested language modifications to it in Question #7 herein. Link - http://compliance.wecc.biz/Documents/2%20-%20WECC%20-%20Compliance%20Bulletins/01.04%20-%20Compliance%20Bulletin%20-%204%20Interpretation%20PRC-004,%20PRC-005%20-%20April%2015,%202011.pdf
1) The SDT states that "one of the basic tenets that the SDT is following is to avoid changes in registration due the revised definition". We stress the implications of a missed opportunity and the importance of a usable BES definition, because if the revised definition does not allow the industry (both registered and non-registered entities) as well as the regional reliability organizations to focus on and conduct business in a fashion that promotes reliable and efficient system operation (not just ultra-conservative compliance monitoring), then NERC has failed to do its job in this particular instance. 2) The proposed implementation plan indicates that the effective date of this definition is not for at least 24 months after regulatory approval. We strongly disagree with this suggested approach as it does not provide for any benefit from this much-needed improvement. We believe the SDT intended to imply that entities not currently registered would have at least 24 months to become compliant with applicable standards if the improved BES definition suddenly swept them into the BES as it did for many small utilities on June 18, 2007. The definition should become effective immediately upon regulatory approval, and transition plans for newly-registered entities could specify longer timeframes. 3) As currently drafted, NERC's Statement of Compliance Registry Criteria (Revision 5.0) contains the text of NERC's approved BES definition. Upon approval of any other language, the SCRC will become inaccurate without review and modification.
Group
Northern California Power Agency
Scott Tomashefsky
Yes
NCPA supports the comments of the Transmission Access Policy Study Group (TAPS) in this regard.
Yes
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Yes
NCPA supports the comments of the Transmission Access Policy Study Group (TAPS) in this regard.
Yes
NCPA supports the comments of the Transmission Access Policy Study Group (TAPS) in this regard. In addition to this support, NCPA asks for consideration of an alternative approach for determining an exception in this regard, as opposed to having it based on a somewhat arbitrary fixed level of generation (75 MVA). NCPA suggests consideration be given for an approach based on a determined percentage of actual demand for a given LDN. As such, NCPA submits the following with respect to draft exception E3 (b), Limits on Connected Generation: Neither the LDN, nor its underlying Elements (in aggregate), include more than a certain percentage of minimum area load, as determined by the regional entity." Such an approach would require the regional entity to look at the amount of connected generation on a case-by-case basis.
Yes
NCPA supports the comments of the Transmission Access Policy Study Group in this regard.
Yes
NCPA supports the comments of the Transmission Access Policy Study Group in this regard.
Individual
Gary Carlson
Michgan Public Power Agency
Yes
My concern centers on the intent of FERC Order 743 language “we certify that this Final Rule will not have a significant economic impact on a substantial number of small entities” still falls short from being met by this definition change. This is a good start but additional work remains to be done. As pointed out in FERC Order 743A the 100 KV bright-line was not required but NERC can provide an alternative which can be supported technically. Also I have concerns for the FERC Order 743A language “facilities used in the local distribution of energy should be excluded from the revised bulk electric system definition” also needs additional work remains to be done.
Yes
Yes
Generally I would agree with I2 but question the technical justification for 20 MVA without also considering its capacity factor.
Yes
See comments to question 3
No
I would agree to this for Blackstart Resources only designated Blackstart Cranking Paths in the Transmission Operator’s restoration plan regardless of voltage.
Yes
I would suggest I5 be revised to say Wind farm or solar power installation with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a collector system
Yes
I would suggest the following changes be considered: The words “described as” should be deleted from the exclusion to avoid confusion. What matters is how the system is actually connected, not how someone describes it. In addition, “a single Transmission source” should be defined, and should be generic enough to encompass the various bus configurations. It is not the case, for example, that each individual breaker position in a ring bus is a separate Transmission source; in that case, a bus at one voltage level at one substation should be considered “a single transmission source.” Some

examples of configurations that should be considered a single transmission source for this purpose are at https://www.frcc.com/Standards/StandardDocs/BES/BESAppendixA_V4_clean.pdf, Examples 1-6. The phrase “automatic interrupting device” should be replaced with the phrase “switching device”.” Many radials are connected to ring buses or breaker-and-a-half schemes where the breakers (automatic interrupting devices) are within the bus arrangement where the appropriate division between BES and non-BES is at the disconnect switch as the radial “takes off” from the bus arrangement.
Yes
I understand that E2 is intended to apply only to retail customers’ generation. If that is the case then I would suggest the following changes be made to make that limitation clear. Specifically, the first sentence should read: “A generating unit or multiple generating units that serve all or part of retail customer Load with electric energy on the retail customer’s side of the retail meter.”
Yes
I question the technical justification for the 75 MVA and the 100 KV as pointed out in my comments above. But given those points addressed above I would suggest the following clarification be considered. The exclusion refers to groups of Elements that “distribute power to Load rather than transfer bulk power across the interconnected system.” The use of the term “bulk power” is vague and could be read incorrectly as a reference to the “bulk-power system,” which is defined in the Federal Power Act but is not a NERC defined term. If the LDN is connected to the BES at more than one location, there will by definition be some loop flow. We recommend below that Exclusion 3(d) be revised to quantify the amount of loop flow that is permissible in an excluded LDN. In the context of the first sentence of Exclusion E3, less specificity is needed, and the sentence should only be revised for the sake of accuracy to state: “Groups of Elements operated above 100 kV that are primarily intended to distribute power to load rather than to transfer power across the interconnected System.” The exclusion’s reference to connection “at more than one location” is vague. The sentence should be revised to read “connected to the Bulk Electric System (BES) from more than one Transmission source solely to improve the level of service to retail customer Load,” and “Transmission source” should have the same meaning that it does in E1. E3(a) should require that there be switching devices between the LDN and the BES, not specifically automatic fault-interrupting devices. The term “separable by” in “Separable by automatic fault interrupting devices” is unclear and should be reworded. E3(b) To avoid pulling an LDN into the BES based on very small customer-owned generation (such as rooftop photovoltaics and hospital backup diesel generators) that the utility does not consider or rely on, or necessarily even know about, the item should be reworded: “Limits on connected generation: Neither the LDN, nor its underlying Elements (in aggregate), includes more than 75 MVA of generation used to meet the resource -adequacy requirements of electric utilities.” E3(d) states “Not used to transfer bulk power.” As noted above, “bulk power” is a vague term. There will necessarily be some loop flow on a system that is connected to the BES at more than one location. The amount of permissible loop flow for this purpose needs to be determined and stated in this item.
Yes
But I question if the "Small Entity definition" as indicated in Order 743 language "we certify that this Final Rule will not have a significant economic impact on a substantial number of small entities." has been appropriately addressed.
No
As I have indicated in my comments above the "small entity definition" is not being used when the 100 KV, 20 MVA, and 75 MVA aggregate are being used only. A unit with a long start up time and a low capacity factor and/or availability factor and connected to a local distribution system is interconnected to the BES has little opportunity to be counted on to support the BES during a critical event. With the environmental issues out there it could be expected that owners of these types of units may well decide on economics of the issue and retire such units. How would the reliability of the BES be served then?
No
No
Group

Hydro One Networks Inc
David Curtis
Yes
We agree with the concept of a bright-line definition and commend the SDT for developing a concept of explicit inclusions and exclusions as part of the definition. This will reduce the number of exception applications for some of the BES elements. However, the inclusion and exclusion requirements are extremely restrictive. For example, radial characteristics should not be limited by the amount of installed generation or single transmission source and/or require an interrupting device. Instead we believe that one or more transmission sources could feed the radial load to provide redundancy as long as there is adequate protection and isolation for improved customer-supply continuity and reliability. This should be considered radial as long as the loss of any transmission source does not affect, and is not necessary for, the operation of the interconnected transmission network. Further, it is imperative to understand that the NERC's revised definition will have a direct impact on entities across North America and will conflict with regulatory requirements, Codes, and Licenses. FERC in its Order 743 and 743A has directed NERC to address these concerns. We suggest the SDT and RoP teams should: • Carefully craft the exception criteria and procedure to be flexible and technically sound, to allow entities to adequately present their case to the ERO for inclusions or exclusions outside of the definition. This burden of proof should be left to the entity seeking exception because it may be difficult if not impossible to define the exception criteria. If such a criteria could be defined, it will in fact become another bright-line BES. • Include provisions in both the NERC exception criteria and exception procedure for federal, state and provincial jurisdictions. These provisions should provide clear guidance so that, if and when there are deviations from the exception criteria, they are properly identified with technical and regulatory justifications ensuring there is no adverse impact on the interconnected transmission network.
Yes
We agree with the concept of Inclusion I1. However, we suggest that since transformers are already covered by the definition, "all transmission Elements operated at 100 kV and above", and since Inclusions I2 to I5 are commonly related to generation only, Inclusion I1 should be removed and replaced by the following Exclusion: E(x) "Transformers not used as Generator Step-Up (GSU) transformers that have primary or secondary winding at less than 100 kV." We also suggest the SDT to put forward a high-level exception criteria with key menu items of assessment that can be followed continent-wide by entities to put forward their exception for element(s) mentioned in Inclusion I1, or any other inclusion(s). These inclusion(s) that are intended for exemption would be based on the entity's technical assessment, evidence and justification for its unique characteristics, configuration, and utilization.
No
We agree with the concept of Inclusion I2 with respect to individual generating units, but do not support having the entire path labeled as BES. In most cases, neither the path nor a 20 MVA unit itself will have any impact on the reliability of the interconnected transmission network nor is it necessary for the operation. Hence, we do not support the fact that there should be a blanket application of the BES definition to all individual generating units greater than 20 MVA and its connection to the system. It is also important to mention that moving into the future, with the Green Energy and Smart Grid plans advocated by both Canadian and US policy makers, the gross nameplate rating of 20 MVA acquired from NERC registration restricts the penetration of dispersed generation in many parts of North America. We suggest the following: • Generation restriction (20 MVA or 75 MVA) should either be revised or the exception procedure should allow entities, with the support of technical evidence, to exclude element(s) from being labeled as part of the BES. • Entities should be able to use the exception process, with the help of technical evidence, to exclude generating units that do not impact the interconnected grid and the bulk transfer of power. • The path to generating facilities does not need to be BES contiguous. Generating units can be required to be planned, designed, and operated in accordance with a subset of NERC Standards, but should not require a contiguous path unless the unit is identified essential for the operation of transmission network.
No
We agree with the concept of Inclusion I3 with respect to multiple generating units located at a single site, but do not support that the entire contiguous path has to be BES. The path of a 75 MVA plant or aggregated generation will rarely have any impact on the reliability of the interconnected transmission

network nor is it necessary for its operation. We also do not support the fact that there should be a blanket application of this inclusion. As stated earlier, under various green energy, smart grid and dispersed renewable energy plans advocated by both Canadian and US policy makers, the gross nameplate rating of 75 MVA may undermine and deter the future potential of integrating Distributed Generations (DG's) that will be implemented to ensure the reliable operation of the interconnected transmission network BES, and, at the same time, providing the most effective and economical solutions for the rate payers in North America. Local generation can cost-effectively enhance the reliability of load pocket by avoiding transmission, but such restrictions would deter the adoption of good planning decisions. Upcoming load displacement projects would result in the installation of new self-generation facilities at customer sites, with the electricity generated being used on-site by the customer, with a resultant decrease in the consumption of electricity purchased via large scale generation. These projects can be large, and displace a substantial portion of the customer's (or local distribution company's) existing load, even to the extent of total self-sufficiency and the availability of surplus generation. The aggregated surplus generation capacity may very well exceed 75 MVA and would consequently force the facility owners to register as both Generation Owners (GO) and Transmission Owners (TO), which may be in conflict with regulatory rules in many jurisdictions. We suggest the following: • Generation restriction (75 MVA) should either be revised or the exception procedure should allow entities, with the support of technical evidence, to exclude element(s) being labeled as part of BES. • Path to generating facilities need not be BES contiguous unless the unit is identified essential for the operation of transmission network. Generating units can be required to be planned, designed, and operated in accordance with a subset of NERC Standards, but should not require contiguous paths. • Entities should be able to use the exception process, with the help of technical evidence, to exclude generating units that do not impact the interconnected grid and the bulk transfer of power. • From a regulatory perspective such an inclusion could also be in conflict with the current regulatory requirements. Definition and/or exception process should provide acknowledgement and flexibility to avoid any regulatory conflicts. For example, as stated earlier (Q3 response) NERC and SDT should consider introducing a concept of a new category of registration or BES Support elements. These elements are NOT necessarily BES but support the reliable operation of the interconnected transmission network.

No

We do not agree with Inclusion I4. Blackstart resources and transmission facilities on the cranking path should not be classified as BES regardless of size and voltage level. From a regulatory perspective, such an inclusion would be in conflict with the current regulatory requirements in many of the jurisdictions. More importantly, designating these facilities as BES Elements or Facilities beyond the 100 kV bright line, the 20 MVA/unit or 75 MVA/plant criteria, without a regard to their impact on the BES (under conditions other than system restoration) will impose unnecessary requirements for these facilities, which do not contribute to reliability under interconnected operation conditions. For restoration condition, this inclusion is extraneous given there is already a designation specific for system restoration covered by an existing standard to recognize their reliability impacts and to ensure their expected performance. NERC Standards EOP-005-2 stipulates the requirements for testing blackstart resource and cranking paths. This testing requirement suffices to ensure that the facilities critical to system restoration are functional when needed, which meets the intent of identifying their criticality to reliability. While we do not disagree with the SDT's interpretation of the FERC directives, the BES definition should cover those facilities that are needed for operation under both normal and emergency conditions, which includes situations related to black-start and system restoration. We do not agree that the directives specifically ask for inclusion of blackstart resources and facilities on the crank path in the BES definition. We believe the requirements in EOP-005-2 suffice to address the SDT's interpretation and concern regarding recognition of the reliability impacts and requirements for blackstart resources and facilities used for system restoration. Generating units of any size and transmission facilities of any voltage level may be used for blackstart and restoration. Conceivably, a generator of 10 MW and transmission facilities of 44 kV or 69 kV may be a part of the cranking path. A BES inclusion will then subject these generators and facilities, which are essentially "local" facilities but called upon to begin restoring its bulk interconnected counterpart, to comply with the reliability standards intended for maintaining BES reliability. Included in the BES definition will thus discourage smaller generators from providing blackstart capability, and the transmission facilities from being a part of the cranking path. This may also discourage Transmission Owners and Operators from identifying multiple blackstart resources and cranking paths to provide restoration flexibility. Such an inclusion will ultimately undermine reliability. If indeed any of these facilities are deemed necessary to

support bulk power system reliability at times other than system restoration, they would/should have been identified through the basic BES definition and inclusion list or can be addressed through the exception procedure. We suggest and urge the SDT to remove I4 on the basis that: • The availability and performance expectations of blackstart resources and facilities on the cranking path are already specifically addressed in an existing standard; and • Unless they meet the BES definition and the other inclusion criteria, they do not have any perceived reliability impact on everyday operation of the BES.
No
We agree with the concept of Inclusion I5 but do not support that the entire contiguous path has to be BES. The path or aggregate generation will rarely have any impact on the reliability on the interconnected transmission network nor is it necessary for its operation. These are generally referred to as connection facilities. In addition, renewable generation units are intermittent and the planning and operational standards and practices make sure that their unavailability or unexpected (sudden) loss of generation won't jeopardize reliability of the network; therefore, they should not be BES. As stated earlier, with the Green Energy and Smart Grid plans and dispersed renewable energy advocated by both Canadian and US policy makers, the gross nameplate rating of 75 MVA may undermine and deter the future potential of integrating DG's that will be implemented to ensure the reliable operation of the interconnected transmission network BES, and, at the same time, provides the most effective and economical solutions for the rate payers in North America. Local generation can cost-effectively enhance the reliability of load pocket, by avoiding transmission, but such restrictions would deter the adoption of good planning decisions. (Refer to Q4 comments).
Yes
We agree with this concept as part of establishing a bright-line definition, as well as clarifying this exclusion as part of the revised BES definition. Although the concept is consistent with the statements in the FERC Order, it is imperative to understand that the limitations of E1 will have a direct impact on many entities (big and small) along with distribution companies across North America. The exclusion requirements are extremely restrictive with little or no technical basis and are limited to the fact that these parametric restrictions may not have any reliability impact in terms of location, configuration of element, and system characteristics. The radial characteristics and/or the reliability of the interconnected transmission network should not be determined by the amount of installed generation or a single transmission source or an interrupting device. For example, a redundant double circuit designed to supply the load with adequate protection and isolation beyond the radial tap could be significantly better for load supply-continuity and reliability. We suggest if more than one transmission source feed radial load to ensure customer supply continuity and reliability then this should be either part of the bright-line definition as long as there is adequate protection and, the loss of any single transmission source does not affect the interconnected transmission network. We suggest SDT to consider revising E1 as follows: Any radial system which is described as connected from a single Transmission source originating with an automatic interruption device or can be isolated with adequate protection without affecting the BES and: a) Serves load, or, b) Includes generation resources not identified in Inclusions I2, I3, I4 and I5, unless excluded by E2, or, c) Has any combination of items (a) and (b). The radial system can have a normally open switching device for connecting it to a second Transmission source in a 'make-before-break' fashion to allow for reliable system reconfiguration to maintain continuity of electrical service.
Yes
We agree with most of the changes in Exclusion E2. However, we feel there is a need for evidence or technical study in regards to the limits described in I2 & I3. The real net aggregated power seen by the bulk power system at the interconnection, with the outlook of distributed generation systems, may be different than past experience. Hence it requires to be reassessed based on technical studies with respect to the future integration of DG's. (Please refer to comments in questions: 3 & 4). To establish a bright-line definition, Exclusion E2 may be acceptable if the SDT provides adequate provisions within the exception procedure. (See response to Q7)
Yes
We agree with this concept of LDN as part of establishing a bright-line definition along with Exclusion E3. However, restrictions for LDN such as connected Generation must neither be more restrictive than radial nor should generation limits be applicable unless they impact the reliability of interconnected transmission network. Requirements in Exclusion E3 are very restrictive and we do not agree to the

limits on connected generation for Local Distribution Networks (LDN), described in part (b). We suggest that bullet b) be revised and limits on connected generation must not include generation resources identified in Inclusions I2, I3, I4 and I5. The development and implementation of distributed generation will grow considerably in the future and will operate together with conventional sources of energy. The real net aggregated power of distributed generation seen by the bulk power system at the interconnection may be larger than past experience; hence it requires to be reassessed based on technical studies with respect to the future integration of DG's. (Please refer to comments in questions: 3 & 4) Also, we suggest combining exception E3 (c) and (d) as follows: "(c) Power is intended to flow only into the LDN: The generation within the LDN shall not exceed the electric Demand within the LDN; The LDN is intended to deliver power to load and not be used to transfer bulk power between different locations in the BES. It is recognized that under specified system conditions, bulk power transfers may take place between different points of the BES via the LDN. However, for these conditions BES reliability is not dependent on the existence of these power flows through the LDN."

No

Small utility or distribution provider is a relative term. A smaller distribution provider may have an impact on the transmission network while a large one may not; this is based on their design, configuration and protection. Hence, such an exception should apply regardless of the size of an entity. Having said that, the concept discussed here is to define a radial system and not a small utility, as mentioned in the FERC Order. We do not believe that the SDT has proposed exclusion in regards to small utilities. The language used in the proposed clause is only appropriate to establish a bright-line definition for a radial system. It is worth noting that many small utilities (and individual load customers or generation connections) would have more than a single transmission source with a solid tap and, at the same time, be adequately protected and can be effectively isolated without any adverse impact on the transmission network. Such a practice and design is widely used. Hence, we do not agree that this exclusion is an attempt to address the issue of small utilities. The definition and inclusions may force many small entities, load customers and generation unit owners to act and register as Transmission Owners. In some parts of the continent this could be in conflict with state or provincial regulatory act, Codes and Licenses. Consistent with the FERC Order, the ERO and the SDT should be aware of these conflicts and should not ignore them for later. Hence, we suggest that SDT address this by providing explicit but simple provisions in the exception procedure by considering technical assessment of exception criteria to justify the element's necessity for operation. We suggest that the only evidence that should be required of small utilities/entities is: • Regulatory evidence • Evidence demonstrating that NO adverse reliability impact is afflicted on the interconnected BES because of their connection and operations.

No

We commend the SDT for their concept in putting forward a 100kV BES bright-line definition. However, we do not believe that the current definition drafted by the SDT has differentiated between Transmission and Distribution or excluded distribution facilities from the BES, or addressed the issue of local distribution facilities above 100kV. It is worth noting that different jurisdictions may use different terminology for "distribution" or non transmission facilities or elements. For example, some jurisdictions label certain facilities as distribution which connect and are owned and operated by the distribution utility, customer or a generator customer while other label them as connection facility or elements. (See Q10 response)

See earlier comments and suggestions. NERC's revised definition will have a direct impact on many entities across North America and could also be in conflict with regulatory requirements, Codes, and Licenses, which non FERC jurisdictional must comply. It would be hard if not impossible to identify the conflicts. For example: in one of the the provincial energy acts, NERC Standards maycan only apply to generation over 50 MVA which will cause one or more of the requirements to be in conflict and /or what constitutes distribution and what is not considered transmission (such as connection facility to a load or generation and owned by the proponent). However, we agree to establish a 100kV BES bright-line definition and we believe that the best venue to address avoiding compliance conflicts is through the exception criteria and the exception procedure. The benefits of such an approach are: • Establishment of a continent wide bright line definition • Avoidance of regulatory conflicts and legal complexities • Assurance of the reliability of the interconnected transmission network

We believe that the concepts of inclusions and exclusions as part of the bright-line definition are excellent. However, these exclusions do not address adequately several complex issues along with

directives in Order No. 743 and 743A, such as: differentiation between Transmission and Distribution, non-jurisdictional concerns, or distribution. BES definition itself is not a venue to address these complex issues and suggest that these should be addressed by the ERO's exception procedure. We suggest that SDT consider • Removing I5 and adding E4 to exclude intermittent renewable generation (wind and solar). As stated earlier, such units are intermittent and the planning and operational standards and practices ensure that their unavailability or unexpected (sudden) loss of generation won't jeopardize reliability of the network; therefore, they should not be BES. • That the definition and/or exception process should provide acknowledgement and flexibility to avoid any regulatory conflicts. • Introducing a concept of a new category of registration or BES Support (BESS) elements. These elements are NOT BES but support the reliable operation of the interconnected transmission network. A sub-set of relevant NERC Standards should still apply to BESS elements such as planning, design, and maintenance. However, they may not be contiguous or subject to mandatory compliance. We do plan to submit our comments on exception criteria and procedure as part of its process. However, we do suggest that the SDT: • Carefully craft the exception criteria that is flexible and technically sound to adequately allow entities to present their case to the ERO for exception • Verify that the exception criteria should be at a high-level with key menu items of assessment that can be followed continent-wide by entities to put forward their exception for element(s) mentioned in exclusions or inclusions based on technical assessment, evidence and justification for its unique characteristics, configuration, and utilization • Acknowledge and provide provisions in both NERC exception criteria and exception process for federal, state and provincial jurisdictions.

Group

PacifiCorp

Sandra Shaffer

Yes

In general PacifiCorp agrees with the direction of the proposed BES definition. Specific exceptions are discussed in questions 2 - 13

No

Transformers with two or more windings greater than 100 kV exclusively serving local distribution networks should be excluded from the BES.

No

Although certain areas of the country may have a need for generating units of this magnitude to be included in the BES for reliability, the 20 MVA minimum rating essentially discriminates against the owners of these generators. In I3 and I5 a 75 MVA limit has been established for different combinations of generation. This limit should also be used for a single generating unit. Those areas that require generator units less than 75 MVA for reliability should add them back to the BES via the inclusion/exclusion process to be proposed in NERC's Rules of Procedure ("ROP"). • The 20 MVA threshold was intended to mirror the existing NERC Compliance Registry Criteria. This registry value was adopted without the benefit of having been scrutinized through a NERC Reliability Standards Development Process, so the technical record justifying the 20 MVA threshold is non-existent. The BES Drafting Team will need to have technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different framework (i.e., for entity registration). Absent any technical justification, Inclusion I2 should be eliminated. This would leave the 75 MVA threshold in Inclusion I3 and Inclusion I5 as the minimum BES thresholds for generation.Also, please refer to additional comments in question 13 regarding a contiguous BES.

Yes

PacifiCorp understands the SDT is looking for technical reasons for something other than 75 MVA. PacifiCorp believes it is not feasible to determine a value that is consistent across the continent. Although PacifiCorp believes 75 MVA is too low, it is an acceptable number for any configuration of generation (see comment on question 3). Those above 75 MVA believed to be exempt from the BES definition can be processed through the proposed ROP inclusion/exclusion process. PacifiCorp submits the following suggested wording for I3: "Multiple generating units with an aggregate capacity greater than 75 MVA or a single generating unit with a generating capacity greater than 75 MVA….."

No

PacifiCorp supports the concept of unique or singular blackstart paths being included in the BES. However, once the uniqueness of the path disappears PacifiCorp believes the multiple non-unique

blackstart paths should be excluded by definition from the BES. This approach could be equated to pending version 4 of the CIP Reliability Standards, in which the Critical Asset Criteria of CIP-002-4 set forth the facilities comprising the Cranking Paths that are considered Critical Assets, up to the point on the path where two or more path options exist.
Yes
PacifiCorp understands the SDT is looking for technical reasons for something other than 75 MVA. PacifiCorp believes it is not feasible to determine a value that is consistent across the continent. Although PacifiCorp believes 75 MVA is too low, it is an acceptable number for any configuration of generation. Those above 75 MVA believed to be exempt from the BES definition can be processed through the proposed ROP inclusion/exclusion process.
Yes
: Please refer to additional comments in question 13 regarding a contiguous BES.
Yes
Yes
PacifiCorp believes this meets FERC's intent in Order Nos. 743 and 743A, however additional clarification may be added particularly around items b and c. Regardless of the generation level (item b), if the power only flows into the Local Distribution Network ("LDN") (item c) then the the level of generation is not material and should have no impact on the reliable operation of the BES.
Yes
PacifiCorp believes this concept is appropriate with the following concern: Essentially the only difference between this proposed exclusion and E1a is this proposed exclusion does not include "an automatic interruption device". So if the proposed E4 is left as a stand-alone exclusion it should also require "an automatic interrupting device" qualifier. Technical justification for requiring an interrupting device is the same justification used by the SDT in E1.
Yes
PacifiCorp understands that no single bright line can accommodate all the various scenarios of local distribution. The proposed definition appears to capture a high percentage of LDNs. Additional LDNs can be addressed through the exemption process. Also, please refer to additional comments in question 13 regarding a contiguous BES.
Yes
The SDT proposal combined with the ROP may be in conflict with Section 215 of the Federal Power Act ("FPA") which excludes "facilities used in the local distribution of electric energy" from the definition of "bulk-power system." As identified in other responses, without a technical reason for setting the generation limit to 20 MVA and even 75 MVA and/or requiring a contiguous BES to include such generators may be over-inclusive and by default require several elements which are not required for the reliable operation of the BES to be included in the BES definition.
• Effective dates: While understanding that additional facilities will require up to two years to come into compliance, several facilities will also be excluded that are currently under the current bright line definition. Are utilities going to be responsible to maintain all NERC reliability standards during the two year period for facilities or elements that will be excluded by the new bright line definition? PacifiCorp proposes that the effective date for facilities being removed from the bright line become effective on the first day of the first calendar quarter after applicable regulatory approval. It is reasonable to retain the two year period for facilities that will be added to the BES. • NERC Staff has submitted written comments to this project stating that the BES "must be contiguous." Instituting a contiguous BES with Inclusion I2, for example, would result in a substantially over-inclusive BES definition. The adoption of a "contiguous" BES is therefore likely to result in imposition of reliability standards on a substantial number of distribution elements that have nothing to do with improving or protecting the reliability of bulk transmission system. There is no compelling reason to adopt a "contiguous" BES that covers local distribution systems. Section 215 of the FPA provides FERC with jurisdictional authority over "users" as well as "owners" and "operators" of the bulk power system. Consequently, FERC has the jurisdictional authority to require generation and other entities to comply with applicable NERC requirements. Hence, even where an entity does not own or operate BES assets, it could still be required, for example, to provide necessary information to the applicable Reliability Coordinator or Planning Coordinator and to participate in programs to prevent instability, uncontrolled

separation, or cascading outages to the bulk transmission system. This approach would fully achieve the goals of bulk transmission system reliability without imposing the full BES regulatory compliance burden on local distribution elements. • Although not specifically the responsibility of the SDT, it should closely coordinate its efforts with the team developing the inclusion/exclusion process in the ROP. For instance, if the ROP team develops an overly onerous process to exclude elements which are not required to reliably operate the interconnected BES yet are not excluded through the bright-line definition then PacifiCorp would consider the bright-line definition to be over-inclusive.
Individual
Peter Mackin
Utility System Efficiencies, Inc.
Yes
USE believes the final phrase in I1 more appropriately should be "…unless excluded under Exclusions E1 or E3." Also, the term "two windings" may be technically incorrect because some transformers may only have one winding per phase. This wording would exclude single-winding transformers (e.g., autotransformers) at or above 100 kV. One option may be to change the language to "two terminals" instead of "two windings." It may also be useful to clarify that transformers with one terminal above and one terminal below 100 kV should be excluded.
No
The 20 MVA threshold appears to have been drawn without explanation from the existing NERC Statement of Compliance Registry. Given that the purpose of the Compliance Registry is to sweep in all generators that might be material to the operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the operation of the BES, the STD has acted arbitrarily and without adequate technical justification in adopting the 20 MVA threshold. In responding to comments on its initial proposal, the SDT states that it adopted the 20 MVA threshold because "there is no technical basis to change the values contained in the Statement of Compliance Registry Criteria." Consideration of Comments on Definition of Bulk Electric System – Project 2010-17, March 30, 2011, at 30. But this response gets the equation backwards. The SDT must have some technical justification for adopting the 20 MVA threshold beyond the fact that it was previously adopted by NERC in a different context. Without a technical justification demonstrating that facilities operating at capacities as low as 20 MVA are "needed to maintain transmission system reliability," the proposed definition is overly broad and fails to comply with the restrictions imposed by Congress in FPA Section 215(a)(1), 16 U.S.C. § 8240(a)(1). Further, the Statement of Compliance Registry was adopted without the benefit of having been vetted through the NERC Standards Development Process, so the technical record underlying the choice of that threshold is unavailable for review by the industry.
No
USE is concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore properly included in the BES definition.
Yes
No
USE agrees that it is important to address wind generation facilities and similar generation facilities in which a large number of generating units, each with a relatively small capacity, are clustered and fed into the grid at a single interconnection point. That being said, Snohomish is concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.
Yes
USE agrees in concept with this Exclusion. However, it is unclear what is required to demonstrate the "make-before-break" connection. Is this statement intended to mean that the normally-open switch is mechanically or electrically interlocked to ensure the "make-before-break" requirement is met? It would be a normal switching practice to close the normally-open switch to make the parallel before

opening the normally-closed switch, but is the normal switching practice sufficient to make this claim? Also, it is unclear whether the automatic interruption device itself is a part of the BES.
No
As noted in USE's response to Question 3, we believe the inclusion of the 20 MVA threshold (through reference to Inclusion I2) lacks an adequate technical justification in this context. In addition, whether or not there is provision of standby, back-up, and maintenance power services to the unit(s) or the load is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the item (ii) in this Exclusion should be eliminated.
Yes
USE agrees in concept with this Exclusion. However, in sub-bullet b), as noted in our response to Question 4, there is no technical justification for the 75 MVA threshold on connected generation. In sub-bullet c), it should be clarified whether this requirement is at any time or is for hourly integrated values. Also in sub-bullet e), the use of the term “major transfer paths” should be modified to be “major transfer paths in the Table titled Major WECC Transfer Paths in the Bulk Electric System.” Finally, the reference to “above 100 kV” should be “at or above 100 kV” for consistency with the rest of the definition.
Yes
Yes
No
The definition should also reference the exception process and technical justification allowed for further inclusion or exclusion from the BES.
Individual
Keith Morisette
Tacoma Power
Tacoma Power generally supports clarifying changes to the BES definition by the SDT and the goal of including only those facilities that materially impact the reliable operation of the interconnected bulk transmission system. We propose one change to help guide the industry as the definition is applied. Currently, the definition includes the clause ‘unless such designation is modified by the list shown below,’ positioned after the reactive resources clause. Due to the position of the clause, it can be misinterpreted to apply only to reactive resources. To eliminate this ambiguity, we suggest that the proposed definition be reordered to read as follows: “Bulk Electric System (BES) definition: (A) Unless included or excluded in Section B below, the BES consists of: (1) All Transmission Elements operated at 100 kV or higher; (2) Real Power resources identified in Section B below; and (3) Reactive Power resources connected at 100 kV or higher. (B) [BES designation criteria, list of inclusions and exclusions].” Additionally, the BES definition should not require the inclusion of contiguous elements as the definition is further developed. Lastly, the proposed BES definition for comments is not clear on the state of the system conditions (normal or emergency) that should be assumed when applying the definition. The definition should apply to only normal operating conditions.
Tacoma Power agrees with Inclusion I1. However, we believe the reference to ‘two windings’ is ambiguous and propose changing it to read, “Transformers, other than Generator Step-up (GSU) transformers, including Phase Angle Regulators, with two or more connections to Elements at 100 kV or higher, unless excluded under Exclusions E1 and E3.”

Tacoma Power generally supports Inclusion I2. However, the term 'gross nameplate rating' is not defined and should be replaced with a specific definition. Additionally, no justification for the 20 MVA level has been provided and therefore it appears arbitrary. Since this measurement will define Elements for absolute inclusion in the BES, the threshold for generation units should be based on a need to maintain transmission reliability. Generation units located within a Local Distribution Network (LDN), which do not exit the LDN, should not be included. We propose changing Inclusion I2 to read, "Individual generating units greater than 20 MVA (ratings based on the Code of Federal Regulation, CFR 18, Part 11.1 definition "Authorized Installed Capacity") including the generator terminals through the GSU which has a high side voltage of 100 kV or above, except generating units that are within a Local Distribution Network (LDN) and do not have a net export out of the LDN."
Tacoma Power generally supports Inclusion I3. However, the term 'gross aggregate nameplate rating' is not defined and should be replaced with a specific definition. Additionally, no justification for the 75 MVA level has been provided and therefore it appears arbitrary. Since this measurement will define Elements for absolute inclusion in the BES, the threshold for multiple generation units located at a single site should be based on a need to maintain transmission reliability. Such single sites located within a Local Distribution Network (LDN), which do not exit the LDN, should not be included. We propose changing Inclusion I3 to read, "Multiple generating units located at a single site with an aggregate capacity greater than 75 MVA (aggregate capacity based on the Code of Federal Regulation, CFR 18, Part 287.1, "Determination of powerplant design capacity") including the generator terminals through the GSUs, connected through a common bus operated at a voltage of 100 kV or above, except multiple generating units located at a single site that are within a Local Distribution Network (LDN) and do not have a net export out of the LDN."
Tacoma Power generally supports Inclusion I4. We believe additional consideration should be given to identifying only the Blackstart Resources that support a regional recovery. Based on that criteria, we propose changing Inclusion I4 to read, "Blackstart Resources and the designated blackstart Cranking Paths identified in the Transmission Operator's restoration plan, regardless of voltage, and included in a regional restoration plan."
Tacoma Power generally supports Inclusion I5. However, the term 'gross aggregate nameplate rating' is not defined and should be replaced with a specific definition. Additionally, no justification for the 75 MVA level has been provided and therefore it appears arbitrary. Since this measurement will define Elements for absolute inclusion in the BES, the threshold for dispersed power producing resources should be based on a need to maintain transmission reliability. Further, there is no traceable definition for 'collector system.' Rather than defining it, it can be replaced with a 'common interconnection point.' Lastly, such dispersed resources located within a Local Distribution Network (LDN), which do not exit the LDN, should not be included. We propose changing Inclusion I5 to read, "The common interconnection point for dispersed power producing resources with aggregate capacity greater than 75 MVA (aggregate capacity based on the Code of Federal Regulation, CFR 18, Part 287.1, "Determination of powerplant design capacity") connected to an Element that is part of the BES, except for common interconnection points that are within a Local Distribution Network (LDN) and do not have a net export out of the LDN."
Tacoma Power supports Exclusion E1.
Tacoma Power generally supports Exclusion E2. However, no justification for the 20 MVA and 75 MVA levels in Inclusion I2 and Inclusion I3 have been provided and therefore they appear arbitrary. Since this measurement will define Elements for absolute inclusion in the BES, the thresholds should be based on a need to maintain transmission reliability. We strongly urge the SDT to accept our proposed changes to Inclusion I2 and Inclusion I3, listed above in items 3 and 4.
Tacoma Power generally supports Exclusion E3 that provides for the exclusion of Local Distribution Networks (LDNs) from the BES, with the following modifications: 1) It is not necessary to articulate the nature of the LDN's connection to the BES. If the characterizations are met, the number of connections and the reasons for the connections are immaterial. 2) If the LDN is a normal net import, there is no need to limit the amount of connected generation since the generation will have no material effect on the BES. 3) 'Bulk power transfers' are acceptable across an LDN if the transfer is to a nested LDN. Contractual energy, originating outside the LDN and delivered to a nested LDN, for example, is still load delivery and has the same physical characteristics of a holistic LDN and the transfer of bulk power is immaterial. We propose changing Exclusion E3 to read, "Local Distribution Networks (LDN): Groups of Elements operated above 100 kV that distribute power to Load rather than transfer bulk power across the Interconnected System. The LDN is characterized by all of the

following: a) Separable by automatic fault interrupting devices: Wherever connected to the BES, the LDN must be connected through automatic fault-interrupting devices; b) c) Power flows only into the Local Distribution Network: The generation within the LDN shall not exceed the electric Demand within the LDN; d) Not used to transfer bulk power, except transfers to nested LDNs: The LDN is not used to transfer energy originating outside the LDN for delivery through the LDN, except transfers to nested LDNs; and e) Not part of a Flowgate or Transfer Path: The LDN does not contain a monitored Facility of a permanent flowgate in the Eastern Interconnection, a major transfer path within the Western Interconnection as defined by the Regional Entity, or a comparable monitored Facility in the Quebec Interconnection, and is not a monitored Facility included in an Interconnection Reliability Operating Limit (IROL)."

Tacoma Power supports the SDT's thoughtful approach to minimizing impacts to small entities. They have no measureable impact to the BES and should not be burdened with the exemption process.

Tacoma Power supports the work of the SDT towards a revised BES definition directly linked to the exemption process of inclusions and exclusions. The definition must be closely coupled to the exemption process and the two must move forward together. This will ensure that only the facilities that materially impact the reliability of the BES will be burdened with the regulatory requirements.

Tacoma Power is not aware of any conflicts at this time.

Tacoma Power supports the SDT's efforts to create an acceptable BES definition directly linked to an exemption process. Please be aware that the WECC has a task force, the Bulk Electric System Definition Task Force (BESDTF), which has done some notable work on this task. See WECC BESDTF Proposal 6, Appendix C (http://www.wecc.biz/Standards/Development/BES/default.aspx). The BES definition is very complex and the BESDTF has already addressed many of the tough issues that have yet to be addressed in this process, such as: • Local Distribution Network definition for automatic exemption • Determination of radial facilities • Demarcation of BES and non-BES Elements • Alternate dispute resolution process • Assignment of the burden of proof for the exemption process • Technical approach for the inclusion/exclusion determination Thank you for consideration of our comments.

Individual

Russell A. Noble

Cowlitz County PUD

No

Cowlitz supports the approach the Standards Development Team ("SDT") has taken to defining the Bulk Electric System ("BES"). The changes made in the revised core definition are helpful and represent significant progress toward an acceptable definition. With an effective and efficient exclusion process, the new definition will better define the BES as a whole. However, the SDT should bear in mind the restrictions contained in Section 215 of the Federal Power Act ("FPA") regarding the definition of the term "bulk-power system" and FERC's past statements in acceptance of NERC's term "bulk electric system." FERC clearly states that the statutory term "bulk-power system" is not clearly defined, but also cannot be subject to the ANSI standard development process under the ERO. Further, FERC has "chosen to defer, for the time being, to the ERO as to which entities must comply with Reliability Standards," and rely on the NERC definition of "bulk electric system" to facilitate this end. Therefore, although the SDT may not attempt to define "bulk-power system" or equate it as equal to the BES, the SDT should make every effort to draw upon the stated restrictions within the FPA concerning the "bulk-power system" in its revised BES definition. The "bulk-power system" definition imposes limits on the reach of the mandatory reliability regime as those "facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof)" and "electric energy from generation facilities needed to maintain transmission system reliability." Further, "[t]he term does not include facilities used in the local distribution of electric energy." Congress reinforced that limit in Section 215(i), where it emphasized that the FPA authorizes the imposition of reliability standards "for only the bulk-power system." Cowlitz is concerned that the SDT's proposed definition is overly-broad, and that it will sweep in many Elements that have little or no material impact on the reliable operation of the interconnected bulk transmission grid. For example, the definition uses the arbitrary 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators. Accordingly, for the BES definition to conform to the requirements of the statute, the SDT must adopt an effective mechanism to exempt facilities like these that are improperly swept in by the SDT's brightline approach to inclusions and exclusions. For this reason, the Exception and Inclusion process to accompany the SDT's core definition is of critical

concern. However, the revised core definition should by default exclude those elements of the electric system that unquestionably are not necessary for operating an interconnected electric energy transmission network. Likewise, the revised core definition should by default include only those elements that unquestionably are necessary. From this, the SDT can further define a subset and provide adequate technical basis for each inclusion and exclution. Cowlitz believes the core definition should reflect the statutory limits, while at the same time realizing that the BES is a subset thereof. Taking from FERC's past orders, the full set of facilities, control systems, and generation of the "bulk-power system" need not all be subject to enforceable reliability standards; a sub-set is permissible as long as there is sufficient technical basis for any exclusion. For now, FERC has allowed unsubstantiated exclusions (e.g. generation below 20 MW) due to the need for expedient implementation of standards, yet allowing for some relief towards unwarranted over compliance burden. Cowlitz suggests a core definition as follows: "Interconnected Transmission Elements, generation resources necessary to maintain the interconnected Transmission Elements reliability unless such designation is modified by the list shown below. Local distribution facilities are excluded." Cowlitz believes the 100 kV demarcation should be removed from the core definition since it is necessary to allow for certain lower voltage interconnected facilities to be included in the BES for reliability; this demarcation should be relocated in the Inclusions listing along with provision for including lower voltage facilities. If the SDT incorporates this statutory language as its core definition, it will have addressed FERC's primary concern with a minimum of disruption to the current NERC system of definitions. The definition could then be further elaborated to show specific points of demarcation for each inclusion and exclusion similar to that Proposal 6 from the WECC Bulk Electric System Definition Task Force ("BESDTF") team to further delineate BES and non-BES facilities. Finally, Cowlitz proposes the following concept: for the "bulk-power system" to be reliable, not all its elements need be reliable unto themselves. If the BES as a subset is properly defined, and is successfully maintained and operated reliably, then the rest of the "bulk-power system" will then benefit and be reliable as a whole.

No

In concept, we support the SDT's attempt to provide a clear demarcation between the BES and non-BES elements. Inclusion I-1 is helpful because it at least implies that the BES ends where power is stepped down from transmission voltages to distribution voltages. We believe, however, that the SDT should undertake the effort to more clearly define the point where the BES ends and non-BES systems begin. In this regard, we note that the WECC Bulk Electric System Definition Task Force ("BESDTF") has devoted considerable effort to this question and has developed one-line diagrams noting the BES demarcation point for a number of different kinds of Elements that are common in the Western Interconnection. Using this work as a starting point, the SDT should be able to provide much useful guidance to the industry with relatively little additional effort. Also, the reference to "two windings of 100 kV or higher" may create some confusion because many three-phase transformer banks have 6 or 9 windings, depending on whether the transformer has a tertiary. We suggest clarifying this provision by changing the clause reference two windings to read: "with two voltage transformer windings of 100 kV or higher per phase that are connected to an interconnected transmission system unless excluded..." We again urge the SDT to consider further delineation of points of demarcation similar to WECC BESDTF Proposal 6.

No

Cowlitz is concerned that I2 inclusion criteria that includes the arbitrary 20 MVA threshold from the NERC Statement of Registry Criteria for inclusion of generators is over-inclusive. We believe that after thorough engineering review, this value should increase. Under FPA Section 215, generation resources are excluded from the "bulk-power system" unless they produce "electric energy" that is "needed to maintain transmission system reliability." Hence, the inclusion as drafted improperly expands the BES definition to include generators that the statute requires to be excluded. We understand that it is not in the scope of the SDT to redefine the Registry Criteria, however we also believe it is not proper for the SDT to use the Registry Criteria as a measure of what to include in the BES. Again we reiterate that the BES is a subset of the "bulk-power system" (BPS). As such, other elements of the BPS can be subject to limited standard compliance to assure reliability of the BES, but not for reliability unto itself. Development of decentralized generation should not be discouraged by overregulation as it in aggregate is more difficult to mount an attack to neutralize it. In the same comments, the SDT also states that it has considered "the inclusion of generator step-up (GSU) transformers and associated interconnection line leads and believes the BES must be contiguous at

this level in order to be reliable." Unfortunately, the SDT appears to have concluded that any interconnection facility operating above 100-kV should be classified as BES. The result will be to require Generation Owners to register as Transmission Owners/Operators, as well, producing substantial additional compliance costs for those Generation Owners but resulting in little or no improvement in the reliability of the BES. We recommend that the SDT, like the Project 2010-07 SDT (commonly referred to as the GO/TO Team), give careful consideration to the practical results of its recommendations rather than relying on abstract conclusions about whether a "contiguous" or "non-contiguous" BES is more desirable. We are concerned that the SDT's pursuit of a "contiguous" BES will result in a substantially over-inclusive BES definition. The "contiguous" BES concept implies that every Element arguably necessary for the reliable operation of the interconnected bulk system must be included in the BES definition, even if it is interconnected with Elements that have no bearing on the operation of the BES. NERC's Standards Drafting Team for Project 2010-07, has already considered this question and, based on an in-depth review of potentially applicable reliability standards, has concluded that generation interconnection facilities, even if operated above 100-kV, need to comply only with a limited set of reliability standards in order to achieve the reliability goals. Much of the work of the Project 2010-07 SDT is applicable to the work of the BES Standards Development Team. For example, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." Similarly, a "contiguous" BES suggests that, because certain system protection facilities, such as UFLS relays, are ordinarily embedded in local distribution systems, the local distribution system, along with the UFLS relays, must be classified as BES to make the BES "contiguous." Such a result is not only plainly contrary to the local distribution exclusion embedded in Section 215 of the FPA, but would, by improperly classifying local distribution lines as BES "Transmission" facilities, result in huge regulatory compliance burdens with little or no improvement in bulk system reliability.

No

Cowlitz is concerned that the 75 MVA threshold has been chosen arbitrarily by the SDT. Like the 20 MVA threshold discussed in our response to question 3, the 75 MVA threshold appears to have been drawn from the NERC Statement of Compliance Registry without appreciation for the function of the threshold in that document and without adequate technical justification demonstrating the generators with an aggregate capacity of 75 MVA produce electric energy "needed to maintain transmission system reliability" and are therefore not properly included in the BES definition.

Yes

Including "all" blackstart and blackstart cranking paths in the BES may ultimately provide an incentive to the electric industry to reduce the number of resources with blackstart capability. We therefore suggest that essential blackstart resources identified by the Regional Entity or Transmission Operator should be included in the Bulk Electric System, but non-essential blackstart resources need not be.

No

Cowlitz agrees that it is important to address wind generation facilities and similar generation facilities in which a large number of generating units, each with a relatively small capacity, are clustered and fed into the grid at a single interconnection point. That being said, we are concerned that the 75 MVA threshold has been chosen arbitrarily for the reasons stated in our comments on Question 4.

Yes

FERC has made clear throughout the Order No. 743 process that the existing exclusion for radials be retained. Cowlitz believes the exclusion as drafted adequately defines radials. Further, we would point out that two transmission systems that are operated radial with a normal open between them can't be operated reliably with the normal open indefinitely closed. Such extended closures are not possible were transmission protection systems are not designed for networked systems.

No

As noted in our response to Question 3, we believe the inclusion of the 20 MVA threshold (through reference to Inclusion I2) lacks an adequate technical justification in this context. Further, unless the generation unit is reliability-must-run or essential blackstart, the function of the unit is irrelevant to the reliable operation of the interconnected bulk transmission grid, and we therefore believe the reference to the function of the generation unit ("standby, back-up, and maintenance power…") should be eliminated.

Yes
Cowlitz strongly supports the categorical exclusion of Local Distribution Networks from the BES. In fact, for reasons discussed at length in our answer to Question 1, we believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement to exclude all facilities used in the local distribution of electric power. LDNs are, of course, probably the most common kind of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. Cowlitz supports the LDN exclusion, but we believe the exclusion should be refined in the following respects: • The SDT's draft states that: "LDN's are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load." (emphasis added) We recommend that the SDT revise the sentence quoted above as follows: "LDN's are connected to the Bulk Electric System (BES) at more than one location solely to improve the level of service to retail customer Load and not to accommodate bulk transfers of power across the interconnected bulk system." By instituting this suggestion, the SDT would emphasize the key difference between an LDN, which is designed to reliably serve local, end-use retail customers, and the BES, which is designed to accommodate bulk transfer of power at wholesale over long distances. We propose that a reliable BES will help insure a reliable LDN. If the LDN is not reliable, it should then be an issue to be resolved by the local authorities. If the BES is not reliable, the local authorities lack the tools to remedy the situation.
Yes
Cowlitz supports the SDT in its efforts to avoid unintended consequences from changes to the BES definition, especially for small entities that can ill afford the substantial costs that accompany imposition of mandatory compliance with reliability standards. Further, we agree that the small utilities covered by the exemption will have no measurable impact on the operation of the interconnected BES. In the Pacific Northwest, many small entities were required to register by virtue of owning a very small portion of the region's 115-kV system. These utilities have faced substantial compliance burdens even though their operations are simply not material to the interconnected bulk grid in our region, and the investment of resources in compliance therefore will have no measurable effect in improving the reliability of the interconnected grid. Further, the such resources used to comply with the reliability efforts unjustly take away from necessary resources needed for local quality of service efforts.
No
While Cowlitz agrees that the approach adopted by the SDT -- a core definition coupled with specific inclusions and exclusions – will be effective in removing most local distribution facilities from the BES, it will not remove all such facilities. For the reasons discussed at greater length in our answer to Question 1, Cowlitz believes that the proposed definition is over-inclusive and is likely to sweep up certain facilities used in local distribution that should not be classified as BES. As discussed in our answers to several questions, Cowlitz notes that exclusion of facilities from the BES does not mean that owners of those facilities are entirely exempt from reliability standards. On the contrary, the statute provides that "users" of the BPS can be subject to reliability regulation. Hence, even where an entity does not own BES or BPS assets, it could be required to, for example, provide necessary information to the applicable Reliability Coordinator and to participate in the regional Under-Frequency Load Shedding program by setting the UFLS relays in its Local Distribution Network at the appropriate settings. We note that participants in the WECC BESDTF Task Force generally agreed that appropriate information should be provided by non-BES entities, although there was considerable concern related to ensuring that the provision of information was not unduly burdensome.
Yes
The Exceptions process is a necessary part of making this proposal complaint with the Federal Power Act. As noted in our responses to Question 1 and Question 11, we believe the basic SDT proposal is potentially in conflict with the limitations of the Federal Power Act, and in particular the statutory exclusion for facilities used in the local distribution of electric energy. The SDT's approach can meet the statutory requirements only if the Exception process currently under development results in facilities that are not properly classified as BES being exempted from regulation as BES facilities. Cowlitz understands the difficulty in demonstrating what is and is not distribution to FERC due to the vague statute language. Cowlitz will work to help provide technical arguments which will buttress the BES definition in the future.

Cowlitz has these additional concerns: • The current definition provides that “Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process.” Cowlitz is concerned that the SDT carefully delineate which entity has the burden of proof in the exclusion process. The WECC BESDTF approach, which we commend to the SDT, laid out these burdens in some detail. Under that approach, essentially, if a facility is excluded from the BES by virtue of the specific exclusions listed in the definition, the Regional Entity bears the burden of proving that the facility nonetheless has a material impact on the interconnected bulk transmission system and therefore should be included in the BES. On the other hand, if a facility is classified as BES by virtue of the list of inclusions set forth in the BES definition, it can still escape classification as BES, but bears the burden of demonstrating that its facility has no material impact on the interconnected transmission system. We urge the SDT to give careful consideration to these burden-of-proof questions and to follow the lead of the WECC BES Task Force. • For the reasons we have explained in our answer to Question 11, we believe the Exception process is critical both to ensure that the BES definition is effective in producing measurable gains to bulk system reliability and to ensuring that the definition will comply with the limitations Congress placed in Section 215. Hence, we believe the entire BES definition, including the Exception process and related procedures, should be vetted through the NERC Standards Development Process, including the full comment periods and a ballot approvals provided for in that process. We are concerned that important elements of the BES definition have been assigned to the Rules of Procedure Team, and that changes in the Rules of Procedure are subject to approval in a process that provides considerably less due process and industry input than the Standards Development Process. Accordingly, we urge that all elements of the BES definition, including those elements that have been assigned to the Rules of Procedure Team, be vetted through the Standards Development Process.
Individual
Mihai Cosman
California Public Utilities Commission
Yes
The CPUC supports the changes, especially the exclusions and the flexibility given to facilities to prove that they are not part of the BES. However, the CPUC is concerned about the automatic imposition of deterministic standards that are arbitrary rather than technically-based: (1) the 100kV “bright line” test for transmission facilities, and the (2) 20 MVA threshold for generating units. In general, the current BES definition is largely deterministic rather than based on economics or probabilities. An arbitrary number such as a “bright line” test should not be the singular gauge for inclusion in the BES. A robust BES definition should consider the actual impact on the system and the cost. The courts have spoken on the issue, Illinois Commerce Commission v. Federal Energy Regulatory Commission, 576 F.3d 476, and instructed FERC to approve projects, “pricing scheme”, only if the benefits outweigh the cost. Further, the 20 MVA threshold for generating facilities is coincident with the NERC threshold for registered entities. While a logical threshold to require generators to register with NERC, the required reliability assessments, and subsequent reliability upgrades may be prohibitively expensive for small generating units.
Yes
The CPUC would like a technical justification/rational for the 20 MVA threshold. We understand and agree with the ability to show no impact through a technical impact assessment, but such an assessment may be costly for a small 20-50 MW peaker plant that may operate for few hours during any given month. The cost imposed to small generating plants that operate a few hours a month may be too excessive given the probability of the generator causing an event and the cost associated with the event. The BES definition should be more than a deterministic standard and should properly assess every asset it proposes to include, especially given what the courts have ruled. We believe it would be preferable to include individual elements at power plants that can impact the BES (governors, system stabilizers, breakers,…) rather than to extend the definition of the BES to include all small power plants.