

Consideration of Comments

Project 2010-17 Proposed Definition of Bulk Electric System Phase 2

The Project 2010-17 Drafting Team thanks all commenters who submitted comments on the standard. These standards were posted for a 30-day public comment period from September 27, 2013 through October 29, 2013. Stakeholders were asked to provide feedback on the standards and associated documents through a special electronic comment form. There were 40 sets of comments, including comments from approximately 98 different people from approximately 66 companies representing 9 of the 10 Industry Segments as shown in the table on the following pages.

All comments submitted may be reviewed in their original format on the standard's [project page](#).

The SDT did not receive any technically supported arguments to support making any changes to the posted definition.

The SDT will be revising the Reference Document once the Phase 2 project is completed and will post it for comments as was done with the Phase 1 version. Comments on specific sections and diagrams will be considered at that time.

Minority opinion:

The SDT has retained the language of Inclusion I4 to clearly reflect the SDT's intent to include individual dispersed power producing units (such as wind and solar units) that aggregate to greater than 75 MVA, along with the collector system that connects these units, from the point they aggregate to greater than 75 MVA to the point of connection at 100kV or higher. While the SDT recognizes that some stakeholders do not agree with the inclusion of individual dispersed power producing units, FERC Orders 773 and 773-A approved the inclusion of these individual units. Technical rationale to support removal of the individual units from the definition was not seen in the stakeholder comments received by the SDT. The SDT believes that stakeholder concerns about inclusion of individual units may be addressed by specifying the Facilities to which an individual standard applies within the Applicability section of that standard.

In the Phase 2 definition, the drafting team has modified the treatment of collector systems for dispersed power producing resources. FERC Orders 773 and 773-A identified a concern that the Commission expressed regarding dispersed power collector systems. This has prompted the SDT to consider an appropriate and consistent method of addressing collector systems. The result addresses collector systems in a clear fashion that leaves no room for arbitrary determinations and eliminates the unintended consequences of categorically including as part of the BES assets that may include local distribution facilities.

Rationale:

The significant differences in collector system configurations that exist today did not lend itself to a continent-wide bright-line determination which has resulted in the SDT's effort to properly identify the portions of the

collector system which consistently provides a reliability benefit to the interconnected transmission network and are easily identified within collector systems. The result identifies the point of aggregation of 75 MVA and above and the interconnecting facilities to the interconnected transmission network. The aggregation threshold is consistent with the aggregation of capacity in Inclusion I4 and recognizes that the loss of those facilities would represent a loss of 75 MVA capacity to the BES.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Mark Lauby, at 404-446-2560 or at mark.lauby@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

Index to Questions, Comments, and Responses

¹ The appeals process is in the Standard Processes Manual: http://www.nerc.com/files/Appendix_3A_StandardsProcessesManual_20120131.pdf

1. The SDT has re-structured the language of Inclusion I4 to more clearly reflect the SDT’s intent to include individual dispersed power producing units (such as wind and solar units) that aggregate to greater than 75 MVA , along with the collector system that connects these units, from the point they aggregate to greater than 75 MVA to the point of connection at 100kV or higher. While the SDT recognizes that some stakeholders do not agree with the inclusion of individual dispersed power producing units, FERC Orders 773 and 773-A approved the inclusion of these individual units. No stakeholder has provided a technical rationale to support removal of the individual units from the definition. The SDT believes that stakeholder concerns about inclusion of individual units may be addressed by specifying the Facilities to which an individual standard applies within the Applicability section of that standard. With this background, can you support the proposed clarifications to I4? If not, please provide technical rationale for your disagreement along with suggested language changes.10
2. Are there any other concerns with this definition that haven’t been covered in previous postings, questions and comments?37

Group/Individual	Commenter	Organization	Registered Ballot Body Segment											
			1	2	3	4	5	6	7	8	9	10		
12. Michael Lombardi	Northeast Power Coordinating Council	NPCC 10												
13. Randy MacDonald	New Brunswick Power Transmission	NPCC 9												
14. Bruce Metruck	New York Power Authority	NPCC 6												
15. Silvia Parada Mitchell	NextEra Energyt, LLC	NPCC 5												
16. Lee Pedowicz	Northeast Power Coordinating Council	NPCC 10												
17. Robert Pellegrini	The United Illuminating Company	NPCC 1												
18. Si Truc Phan	Hydro-Quebec TransEnergie	NPCC 1												
19. David Ramkalawan	Ontario Power Generation, Inc.	NPCC 5												
20. David Burke	Orange and Rockland Utilities Inc.	NPCC 3												
21. Ayesha Sabouba	Hydro One Networks Inc.	NPCC 1												
22. Brian Shanahan	National Grid	NPCC 1												
23. Wayne Sipperly	Ne York Power Authority	NPCC 5												
24. Ben Wu	Orange and Rockland Utilities Inc.	NPCC 1												
2.	Group	Janet Smith, Regulatory Affairs Supervisor	Arizona Public Service Company	X		X		X	X					
None														
3.	Group	Scott Brame	North Carolina Electric Membership Corporation	X		X	X	X						
Additional Member		Additional Organization		Region	Segment Selection									
1.	Scott Brame	North Carolina Electric Membership Corporation	SERC	5										
2.	John Lemire	North Carolina Electric Membership Corporation	SERC	4										
3.	Doug White	North Carolina Electric Membership Corporation	SERC	3										
4.	Robert Thompson	North Carolina Electric Membership Corporation	SERC	1										
4.	Group	Ben Engelby	ACES Standards Collaborators						X					
Additional Member		Additional Organization		Region	Segment Selection									
1.	John Shaver	Arizona Electric Power Cooperative/Southwest Transmission Cooperative, Inc.	WECC	1, 4, 5										
2.	Megan Wagner	Sunflower Electric Power Corporation	SPP	1										
3.	Shari Heino	Brazos Electric Power Cooperative, Inc.	SERC	1, 5										
4.	Kevin Lyons	Central Iowa Power Cooperative	MRO											
5.	Mohan Sachdeva	Buckeye Power, Inc.	RFC	3, 4										
5.	Group	Robert Rhodes	SPP Standards Review Group		X									
Additional Member		Additional Organization		Region	Segment Selection									
1.	John Allen	City Utilities of Springfield	SPP	1, 4										

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2. Brenda Frazer	Edison Mission Marketing and Trading	SPP 5, 6																																																										
3. James Nail	City of Independence, MO	SPP 3																																																										
4. David Pham	Empire District Electric	SPP 1																																																										
5. Mahmood Safi	Omaha Public Power District	MRO 1, 3, 5																																																										
6. Don Schmit	Nebraska Public Power District	MRO 1, 3, 5																																																										
7. Kayleigh Wilkerson	Lincoln Electric System	MRO 1, 3, 5																																																										
8. Laura Cox	Westar Energy	SPP 1,3,5,6																																																										
9. Kevin Nincehesler	Westar Energy	SPP 1,3,5,6																																																										
10. Don Taylor	Westar Energy	SPP 1,3,5,6																																																										
6.	Group	Wayne Johnson	Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia			X		X		X	X																																																	
None																																																												
7.	Group	Louis Slade	Dominion			X		X		X	X																																																	
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9.	Group	Michael Lowman	Duke Energy					X			X																																																	

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11.	Group	David Dockery	Associated Electric Cooperative, Inc. - JRO00088	X		X		X	X																																
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13.	Group	Jamison Dye	Bonneville Power Administration	X		X			X																																
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14.	Individual	Bangalore Vijayraghavan	Pacific Gas and Electric Comapny	X																																					
15.	Individual	John Falsey	Invenergy LLC					X																																	
16.	Individual	Thomas Foltz	American Electric Power	X		X		X	X																																
17.	Individual	David Jendras	Ameren	X		X		X	X																																

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18.	Individual	Joe O'Brien	NIPSCO	X		X		X	X					
19.	Individual	Kathleen Goodman	ISO New England, Inc.		X									
20.	Individual	Russell A Noble	Cowlitz PUD			X	X	X						
21.	Individual	Kenneth A Goldsmith	Alliant Energy				X							
22.	Individual	Gerald G Farringer	Consumers Energy											
23.	Individual	Joseph G DePoorter	Madison Gas and Electric Company			X	X		X					
24.	Individual	RoLynda Shumpert	South Carolina Electric and Gas	X		X		X	X					
25.	Individual	Nazra Gladu	Manitoba Hydro	X		X		X	X					
26.	Individual	Marie Knox	MISO		X									
27.	Individual	Alice Ireland	Xcel Energy	X		X			X					
28.	Individual	Thomas Breene	WPSC			X	X	X	X					
29.	Individual	Patrick Farrell	Southern California Edison Company	X		X		X	X					
30.	Individual	Thomas Gianneschi	Alcoa, Inc.							X				
31.	Individual	Gary Kruempel	MidAmerican Energy Company	X		X								
32.	Individual	Randi Nyholm	Minnesota Power	X										
33.	Individual	Don Streebel	Idaho Power Co.	X										
34.	Individual	Barbara Kedrowski	Wisconsin Electric Power Company			X	X	X						
35.	Individual	Bret Galbraith	Seminole Electric Cooperative, Inc.	X		X	X	X	X					
36.	Individual	Michael Goggin	American Wind Energy Association					X						
37.	Individual	Spencer Tacke	Modesto Irrigation District			X	X		X					
38.	Individual	Russel Mountjoy	Midwest Reliability Organization											X
39.	Individual	Ryan Walter	Tri-State Generation and Transmission Association, Inc.	X		X		X						
40.	Individual	Mary Lou Ideus	EDP Renewables North America LLC					X						

If you support the comments submitted by another entity and would like to indicate you agree with their comments, please select "agree" below and enter the entity's name in the comment section (please provide the name of the organization, trade association, group, or committee, rather than the name of the individual submitter).

Summary Consideration: The SDT thanks you for your comments.

Organization	Agree	Supporting Comments of "Entity Name"
Invernergy LLC	Agree	AWEA
EDP Renewables North America LLC		AWEA
MISO	Agree	Madison Gas & Electric

1. The SDT has re-structured the language of Inclusion I4 to more clearly reflect the SDT’s intent to include individual dispersed power producing units (such as wind and solar units) that aggregate to greater than 75 MVA , along with the collector system that connects these units, from the point they aggregate to greater than 75 MVA to the point of connection at 100kV or higher. While the SDT recognizes that some stakeholders do not agree with the inclusion of individual dispersed power producing units, FERC Orders 773 and 773-A approved the inclusion of these individual units. No stakeholder has provided a technical rationale to support removal of the individual units from the definition. The SDT believes that stakeholder concerns about inclusion of individual units may be addressed by specifying the Facilities to which an individual standard applies within the Applicability section of that standard.

With this background, can you support the proposed clarifications to I4? If not, please provide technical rationale for your disagreement along with suggested language changes.

Summary Consideration: The SDT has retained the language of Inclusion I4 to clearly reflect the SDT’s intent to include individual dispersed power producing units (such as wind and solar units) that aggregate to greater than 75 MVA, along with the collector system that connects these units, from the point they aggregate to greater than 75 MVA to the point of connection at 100kV or higher. While Technical rationale to support removal of the individual units from the definition was not seen in the stakeholder comments received by the SDT. The SDT recognizes that some stakeholders do not agree with the inclusion of individual dispersed power producing units, FERC Orders 773 and 773-A approved the inclusion of these individual units. No stakeholder has provided a technical rationale to support removal of the individual units from the definition. The SDT believes that stakeholder concerns about inclusion of individual units may be addressed by specifying the Facilities to which an individual standard applies within the Applicability section of that standard.

Organization	Yes or No	Question 1 Comment
Northeast Power Coordinating Council	No	The use of the word “capacity” is a concern. Generators might not be considered BES under the definition. Suggested change to I4 as follows: I4 - Dispersed power producing resources that aggregate to a gross total nameplate rating greater than 75 MVA, and that are connected through a system designed primarily for delivering such energy to a common point of connection at a voltage of 100 kV or above. Thus, the facilities designated as BES are: a) The individual resources, and b) The system designed primarily for delivering energy

Organization	Yes or No	Question 1 Comment
		from the point where those resources aggregate to greater than 75 MVA to a common point of connection at a voltage of 100 kV or above.
ISO New England, Inc.	No	The use of the word “capacity” is a concern. Below is suggested language.I4 - Dispersed power producing resources that aggregate to a total gross nameplate rating greater than 75 MVA, and that are connected through a system designed primarily for delivering such energy to a common point of connection at a voltage of 100 kV or above. Thus, the facilities designated as BES are: a) The individual resources, and b) The system designed primarily for delivering energy from the point where those resources aggregate to greater than 75 MVA to a common point of connection at a voltage of 100 kV or above.
<p>Response: The SDT does not believe that the use of the term ‘capacity’ is a concern or that it will cause generators not to be considered under the definition. Based on comments received, the majority of the industry seems to understand the use of the term. No change made.</p>		
Arizona Public Service Company	No	The definition should not apply to individual dispersed units that are less than 5 MW because independent units less than 5 MW are too small to have an impact on the BES.
<p>Response: The definition only applies to individual units when they are part of an aggregation that is greater than 75 MVA. Individual stand-alone units of 5 MW would not be included in the definition. No change made.</p>		
North Carolina Electric Membership Corporation	No	We have voted affirmative for this project in the past but are now changing our vote to negative based on the changes made to I4. We feel that the drafting team has further complicated the BES definition by the proposed language in Inclusion I4. According to the Phase 1 definition, dispersed power producing units would only be included if

Organization	Yes or No	Question 1 Comment
		<p>the units reached the 75 MVA aggregate threshold. There is nothing in the Phase 1 definition that would include collector system equipment. The Phase 2 definition is problematic because there is uncertainty regarding the scope of equipment that that would be included as a portion of the collector system. This ambiguity has raised concerns that regional compliance staff may ultimately determine a different set of equipment is included in the BES than the registered entity will leaving the burden on the registered entity to argue why certain elements should not be included in the BES. This will lead to inconsistent compliance outcomes. We cannot support a definition with vague and ambiguous language that could result in negative compliance implications during registration, audits, and enforcement processes. Furthermore, we do not believe any part of the collector system should be included in the definition.</p>
<p>ACES Standards Collaborators</p>	<p>No</p>	<p>We feel that the drafting team has further complicated the BES definition by the proposed language in Inclusion I4. According to the Phase 1 definition, dispersed power producing units would only be included if the units reached the 75 MVA aggregate threshold. There is nothing in the Phase 1 definition that would include collector system equipment. The Phase 2 definition is problematic because there is uncertainty regarding the scope of equipment that that would be included as a portion of the collector system. This ambiguity has raised concerns that regional compliance staff may ultimately determine a different set of equipment is included in the BES than the registered entity will leaving the burden on the registered entity to argue why certain elements should not be included in the BES. This will lead to inconsistent compliance outcomes. We cannot support a definition with vague and ambiguous language that could result in negative compliance implications during registration, audits, and enforcement processes. Furthermore, we do not believe any part of</p>

Organization	Yes or No	Question 1 Comment
		the collector system should be included in the definition.
<p>Response: FERC Orders 773 and 773-A requested the SDT to consider collector systems as part of Phase 2. The SDT has addressed those collector systems in a clear fashion that leaves no room for arbitrary determinations. Furthermore, no change has been made to the definition as to the inclusion of individual units in Phase 2 – units are still only included if they aggregate to greater than 75 MVA. No change made.</p>		
SPP Standards Review Group	No	<p>While we understand that FERC has basically directed the drafting team to include individual dispersed power producing units in the BES, we are concerned about the need for coordination between drafting teams for other reliability standards, such as PRC-004, PRC-005, FAC-008, etc, which may be impacted by the inclusion of these generating units into the BES. Have steps been taken to ensure that this coordination has taken place?</p>
<p>Response: The SDT did review existing standards and believes that no changes are necessary due to the revised definition.</p>		
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia	No	<p>Eliminate Inclusion I4.a. If an individual generating element of a dispersed power producing facility is 20 MVA or larger at a facility rated at 75 MVA or larger it should be included.</p> <p>At Inclusion I4.b, Southern disagrees with the premise that BES elements (measured for compliance) should be applied to the individual dispersed power elements. We do not see the reliability benefit of tracking all of the compliance elements for individual wind turbines when the focus should be placed on the aggregate of the facilities. The proposed approach is similar to applying NERC requirements to the individual coils of a large generator. The subject inclusion should limit the applicability of the BES to the collector bus and the capacity at this point should be 75 MVA or greater to qualify as a BES element.</p>

Organization	Yes or No	Question 1 Comment
<p>Response: Individual units that aggregate to greater than 75 MVA were included in the prior definition and have been accepted by FERC as part of the BES. Nothing changed in that regard in Phase 2 and no entity has provided technical justification for deleting these units. FERC Orders 773 and 773-A requested the SDT to consider collector systems as part of the definition. No change made.</p>		
DTE Electric	No	<p>There is already technical justification to exclude units less than 20MVA, therefore, it is logical to assume that units smaller than 20 MVA should be excluded. Certainly any collector system aggregating to less than 20 MVA should also be excluded. The technical justification to exclude aggregation of less than 75 MVA is the same justification that needs to be applied to these wind and solar sites. The risk of all the units failing at the same time is very low, unless it is a common element failure (collector network, control system or transformer). Therefore, no individual units should be included until they aggregate to 75 MVA. If there is a control system that can impact 75 MVA, then it is included, but not each generator. 75 MVA transformers and relaying would be included etc. Even when considering common mode failure of individual units, it is a very low probability that units would fail at the same time.</p>
<p>Response: The SDT is not aware of any technical justification for excluding units less than 20 MVA nor has any been submitted. No individual units are included unless they are greater than 20 MVA or aggregate to greater than 75 MVA. No change made.</p>		
Associated Electric Cooperative, Inc. - JRO00088	No	<p>The SDT failed to provide technical rationale for their imposing an I4.b sub-aggregate MVA threshold rather than the point aggregating total capacity within these resources' collector-circuits, thereby imposing additional compliance burdens upon those asset owners. Fortunately, a review of the SDT's recorded deliberations will confirm that they recanted their earlier draft-2 reliability-based rationale for having done so. AECl acknowledges that, to some, I4.b might appear more closely aligned with Phase 2's I2.b BES Scope. However AECl also</p>

Organization	Yes or No	Question 1 Comment
		<p>believes that the I4.b “from the terminals” debate revealed that I2.b would have been better technically justifiable at the point of total aggregated plant-capacity as well, a substantive I2.b refinement seemly outside the scope of this Phase 2 SAR. Yet duplicating a I2.b technical flaw, under I4.b, technically can neither serve to correct the I2.b flaw nor justify I4.b.</p>
<p>Response: Collector systems in Inclusion I4b are treated comparably to those in Inclusion I2b. The 75 MVA threshold was validated in the NERC Planning Committee Report of March 2013 which can be found at: http://www.nerc.com/pa/Stand/Project%20201017%20Proposed%20Definition%20of%20Bulk%20Electri/bes_phase2_pc_report_final_20130306.pdf No change made.</p>		
PacifiCorp	No	<p>PacifiCorp continues to believe that individual dispersed generating units should be excluded from Inclusion I4 of the revised BES definition. PacifiCorp does not agree with the SDT’s characterization in the question that no technical rationale was offered by any stakeholder to support removal of the individual units from Inclusion I4. It is PacifiCorp’s understanding that at least several commenting entities have provided sound technical arguments to support the exclusion of individual dispersed generating units. While it may be the case that the SDT does not believe the technical justifications offered by entities have been compelling, the SDT has not provided a complete analysis to the industry refuting each of the technical arguments provided by registered entities. After all, a primary objective of Phase II of the BES definition project was to carefully consider additional technical arguments that would further refine the revised definition, including with regard to individual dispersed generating units.</p> <p>PacifiCorp agrees with the SDT that one suitable solution to address the inclusion of individual dispersed generating facilities may be via</p>

Organization	Yes or No	Question 1 Comment
		<p>adjustments to individual standards’ applicability sections. In order to accomplish the recommended case-by-case review, however, a Standard Authorization Request would likely need to be prepared to commence the NERC standards development process for each potentially impacted standard. In that case, it is more appropriate and efficient to exclude such facilities from Inclusion I4 and then initiate changes to a limited number of impacted standards that should actually apply to individual dispersed generators, rather than initiate individual projects to modify a larger pool of standards for which the application to such generators is not appropriate to promote reliability.</p>
WPSC	No	<p>As our previous comments have indicated, we agree with including the Generating stations with dispersed generation from the point of aggregation to 75 MVA as I4-b does. We also agree with the statement made on the BES Phase II webinar of August 21 that this is the point where the dispersed power plant is significant to the reliability of the BES. We continue to disagree with including the individual resources themselves since, as indicated on the previously referenced webinar, they are not significant to the reliability of the BES. The technical rationale for not including dispersed power producing resources has been included in many past comments and will not be restated here. Compliance with most protection system and equipment rating standards is not possible for individual BES wind turbines without revisions to the standards, or at best without significant resources to apply existing standards to individual units. Some of the standards effected include PRC-004-2a, FAC-001, FAC-003, FAC-008-3, MOD-024, MOD-025, MOD-026, MOD-027, PRC-005, PRC-006-SPP-01, PRC-019, PRC-024, PRC-025, and TOP-003. But we continue to stress that including an I4a will require significant resources in personnel and modifications or result in fast-tracking</p>

Organization	Yes or No	Question 1 Comment
		Standard changes to make compliance possible with no improvement in reliability of the BES. These resources would be better utilized elsewhere to actually improve reliability.
MidAmerican Energy Company	No	<p>MidAmerican continues to believe that individual dispersed generating units should be excluded from Inclusion I4 of the revised BES definition. MidAmerican does not agree with the SDT's characterization in the question that no technical rationale was offered by any stakeholder to support removal of the individual units from Inclusion I4. It is MidAmerican's understanding that at least several commenting entities have provided sound technical arguments to support the exclusion of individual dispersed generating units. While it may be the case that the SDT does not believe the technical justifications offered by entities have been compelling, the SDT has not provided a complete analysis to the industry refuting each of the technical arguments provided by registered entities. After all, a primary objective of Phase II of the BES definition project was to carefully consider additional technical arguments that would further refine the revised definition, including with regard to individual dispersed generating units. MidAmerican agrees with the SDT that one suitable solution to address the inclusion of individual dispersed generating facilities may be via adjustments to individual standards' applicability sections. For example, Reliability Standard MOD-025-2 (pending approval at FERC) includes a provision addressing real power testing for variable generating facilities. In order to accomplish the recommended case-by-case review, however, a Standard Authorization Request would likely need to be prepared to commence the NERC standards development process for each potentially impacted standard. In that case, it is more appropriate and efficient to exclude such facilities from Inclusion I4 and then initiate changes to a limited number of impacted standards that should actually apply to</p>

Organization	Yes or No	Question 1 Comment
		individual dispersed generators, rather than initiate individual projects to modify a larger pool of standards for which the application to such generators is not appropriate to promote reliability.
Wisconsin Electric Power Company	No	<p>Wind generators and solar panels are intermittent resources that are not as dependable as other sources for supporting grid reliability. A sudden drop in wind speed or solar intensity will instantaneously reduce the MW output of all the individual wind turbines or solar panels in the area. It follows then that a single wind turbine or solar panel could not be an Element or Facility necessary for the reliable operation and planning of the interconnected bulk power system. However, common mode failure of multiple turbines or solar panels could be significant to the reliability and planning of the BES. Efforts should be focused on preventing / mitigating the loss of multiple generators with an aggregated capacity of greater than 75MVA. Therefore the elements necessary for the reliable operation and planning of the interconnected bulk power system are the devices that are located where the power is aggregated, and not the individual generators. If individual small generators that are a part of an aggregated facility of 75 MVA or larger (e.g. a 75 MVA wind or solar farm) are considered a part of the BES due to that aggregation, the NERC Standard requirements should only be applied to the aggregation (e.g. the interconnection with the transmission system) and should not be applied to individual generators of less than 20 MVA. This would be consistent with the NERC registration criteria for single and multiple generators at a site.</p>
<p>Response: FERC Orders 773 and 773-A accepted the individual units as part of the BES when they aggregate to greater than 75 MVA. The SDT is not aware of any technical justifications that have been provided showing why or how these units should not be part of the BES. No change made.</p>		

Organization	Yes or No	Question 1 Comment
<p>A SAR has been submitted to the NERC Standards Committee to address the applicability of small, dispersed generating resources within the body of the existing standards. (See: http://www.nerc.com/comm/SC/Agenda%20Highlights%20and%20Minutes/sc_20131017a_agenda_package.pdf - item 5.) Deleting those units from the definition at this time could cause a reliability gap. The proper procedure is to continue to include these units in the BES and allow the project initiated by the SAR to determine when such units can be safely removed from specific standard applicability. No change made.</p>		
<p>Cowlitz PUD</p>	<p>No</p>	<p>We understand the difficulty of backtracking on past progress. We have voted in the affirmative for the greater objective of not impeding the overall positive progress of the definition. However, we acknowledge the industry has identified a valid concern over I4, and although the SDT is powerless to correct the issue, it is important to record and document reservations so future efforts in standard development may be facilitated to correct problems with compliance overreach. Most of the I4 facilities that will be included into the BES inherently work against reliability, and this characteristic can't be mitigated by adherence to the current GO/GOP standards in place. For example, assuring an individual generator protection system of a wind/solar unit will not misoperate adds little protection to the BES when the unit is frequently down due to insufficient wind or sunshine. It is a fact that such generation can't be designated as must run, and instead other generation units which can be dispatched must be available on demand to replace lost wind/solar resources. Therefore, we admonish FERC and NERC to recognize the true nature of wind and solar resources as an effort to reduce carbon footprint on the environment and are not intended to replace dispatchable generation, and that compliance without any reliability return should be removed to facilitate its development.</p>
<p>Response: The SDT thanks you for your support and understanding.</p>		

Organization	Yes or No	Question 1 Comment
Consumers Energy	No	<p>The inclusion and the clarification of the inclusion seem to contradict each other. The highlight portion above seems to indicate inclusion only from the point of aggregation of 75MVA or above. This, in most Wind Park cases would include a collector bus but probably not individual wind turbines. However I4 seems to indicate that the case of a Wind Park that has a total aggregation of 75 MVA, all associated equipment including every individual wild turbine would be included. There is inconsistency. Technical justification should be needed to include resources in the BES, not the other way around. Is there a real expectation that a single collector circuit containing ten, 1.2MW wind turbines can cause cascading or uncontrollable outages of the surrounding system? It is extremely doubtful. Consumers Energy supports the inclusion of equipment where the aggregation of 75 MVA or more connects to the Bulk Electric System at voltages of 100kv or greater. There is a clear indication here that a single contingency can remove the total of the capacity from the system where with the proposed inclusion does not. Administrative burden and compliance risk must be weighed against reliability gain. Including individual wind turbines rather than the aggregate of the wind farm increases such burden without any reliability gain.</p>
<p>Response: A single collector circuit of ten 1.2 MW wind turbines is not included in the BES by application of the definition. Only when the generation aggregates to greater than 75 MVA are the units and the collector system part of the BES as was shown in the diagram presented at the SDT webinar http://www.nerc.com/pa/Stand/Project%20201017%20Proposed%20Definition%20of%20Bulk%20Elec1/bes_phase2_third_posting_20131010_webinar_final.pdf. The SDT believes that the language clarification and re-structuring that were made for this posting clearly show that. Furthermore, if necessary, as approved by FERC in Orders 773 and 773-A, the exception process provides a way to add Elements to, or remove Elements from, the Bulk Electric System. No change made.</p>		
Madison Gas and Electric Company	No	MGE does not understand why individual dispersed power resources remain to be include as we clearly stated during the last comment

Organization	Yes or No	Question 1 Comment
		<p>period. The SDT has stated that no technical rational to support there removal. FAC-001 and FAC-002 are mandatory enforceable Standards that entity's must follow. These Standards provide the justification as pointed out in our last set of comments. The SDT has stated in order to fix this, an addition SAR would be submitted (such as the GOTO) to "fix" this issue. Why would the ERO what to expend resources to fix something after the fact when the SDT has the ability to fix it now. The removal of I4a will solve this issue. If individual resources need to be in based on system instability issues, then this can be addressed at a later date, once it is proven that individual resources need to be considered part of the BES and the individual resources cause BES instability.</p>
<p>Response: Individual dispersed power producing resources are only included in the definition if they are part of an aggregation of greater than 75 MVA. This fact did not change due to the revised definition. FERC has already accepted this status in Orders 773 and 773-A. The SDT does not believe that FAC-001 and FAC-002 present technical justification for excluding such resources. No change made.</p>		
Xcel Energy	No	<p>In several prior comment periods, we have asked many technical questions of the BES SDT, and continue to get generic non-substantive replies. While a majority of our questions still remain unanswered, we have elected to not submit them again. However, we believe it is especially important to understand the SDT's response to this question. When considering a wind farm that would qualify as BES under the currently drafted version, it seems inconsistent that a 2 MVA individual dispersed generator is deemed significant to reliability, while the equipment that is utilized to connect a sub-set of the individual dispersed generators totaling to <75 MVA is deemed not significant to reliability. Please explain the technical rationale for concluding that an individual dispersed generating asset rated at 2 MVA is important to grid reliability but that a collector feeder for a</p>

Organization	Yes or No	Question 1 Comment
		sub-set of these generators which may impact up to 35 (70 MVA) of these individual dispersed generating assets is not critical to reliability?
Minnesota Power	No	Minnesota Power does not believe that 2 MW generators, whether or not they aggregate to 75 MW, should be included in the definition of Bulk Electric System when the distribution transformers that control multiple units are not included. Furthermore, a non-contiguous Bulk Electric System is problematic for maintaining reliability.
Seminole Electric Cooperative, Inc.	No	The drafting team has proposed revised changes to a requirement concerning distributed generation. In particular, when distributed generation, e.g., wind turbines, accumulate to more than 75 MVA, only the turbines and the equipment collecting/transferring more than 75 MVA is covered as BES equipment. This allows for scenarios where non-BES equipment might be located between two separate groups of BES equipment. Seminole does not believe this is FERC’s intent. Seminole acknowledges that FERC did not specifically address distributed generation in past orders when attempting to correct the BES language that resulted in having non-BES equipment separate groups of BES equipment. However, Seminole does not believe the drafting team’s reasoning is sufficient for this exception. Seminole believes that all of the equipment in this scenario should be either BES-regulated or non-BES (non-NERC) regulated.
PSE&G	No	As we stated in our comments to the prior posting, we believe exclusion of “collector systems” for dispersed I4 generators, which includes their GSU, from the BES while similar collector systems are included in the BES for I2 generators creates an unlevel competitive environment between I2 and I4 generators. Dispersed generators are a significant and growing part of generation resources and they

Organization	Yes or No	Question 1 Comment
		<p>compete with traditional generation. Other than the fact that FERC allowed the collector system exclusion, the drafting team has offered no reliability rationale for excluding the collector systems of dispersed generators while including them for I2 generators. [In Order 773, although FERC (P 113 and P 114) stated that radial collector systems used solely to aggregate generation SHOULD be part of the BES since multiple transformers connections did not exempt I2 generators; however, they did not direct NERC to include the collector system in I4 generators in the BES.]</p> <p>Because of the disparate treatment of collector systems, we believe that the drafting team’s BES definition violates Section 303 – Relationship between Reliability Standards and Competition – in the NERC Rules of Procedure under Paragraph 1. Paragraph 1 in Section 303 states: “Competition — A Reliability Standard shall not give any market participant an unfair competitive advantage.” Furthermore, the exclusion of the collector system for I4 generators is the only incident of a non-contiguous BES in the BES definition. The collector systems are solely used by I4 generators to aggregate generation; they have no local distribution application and therefore to do come under the local distribution exemption in the core BES definition (i.e., the BES definition “does not include facilities used in the local distribution of electric energy”).</p>
<p>Response: The SDT cannot assume that the intervening equipment cited is solely used as a collector system. There are too many variables and configurations across the continent to allow for the assumption that collector systems are only utilized for the sole purpose of aggregating dispersed power resources. Therefore on a ‘bright-line’ basis, the SDT only included those portions of the collector system that are strictly utilized for delivering the aggregated capacity of the dispersed power resources to the interconnected transmission system. The intervening equipment cited is being treated in a similar fashion to Cranking Paths. The revised Reference Document will show specific examples. Furthermore, it is not clear that Inclusion I4 presents a competitive advantage to certain types of generation or conversely, a disadvantage to some types of generation, as a class and no evidence has</p>		

Organization	Yes or No	Question 1 Comment
<p>been presented to make that case. While SDT’s must respect competitive aspects of definitions/requirements, the primary function of an SDT is to promote reliability and that is what the SDT believes it has done in this case. Where collector systems support the reliable operation of the surrounding interconnected transmission system and do not have a distribution function, those excluded facilities may be candidates for inclusion through the BES Exception Process. No change made.</p>		
<p>Southern California Edison Company</p>	<p>No</p>	<p>Phase 2 of the BES definition characterizes dispersed power producing resources as being “small-scale” power generation technologies. However, although this characterization is currently the norm, that could easily change in the future. As written, I4 creates an ambiguity for Dispersed Power Producing Resources that are greater than or equal to 75MVA, because these generation resources appear to be included within the BES under both the I2 and I4 inclusions. The problem this creates is that I2 and I4 address the connection facilities differently, with I2 beginning at the generator terminals, while I4 begins at the point where the resources aggregate to greater than 75 MVA. SCE believes that the SDT should clarify which of these inclusions should apply to dispersed power producing resources greater than or equal to 75MVA. SCE is also concerned about how I4 could potentially discourage the development of common points of interconnection (i.e. collector substations) for multiple projects in queue, especially in relation to the E1 and E3 exclusions. In SCE’s experience, “plans of service” that include common collector substations for multiple generation projects can be an effective way to encourage development of renewable resources in renewable-rich areas. However, such resources develop and interconnect as individual projects under separate development paths. The first distributed generation projects connecting to such stations may find their resources initially classified as non-BES if the aggregate generation is less than 75 MVA. However, later projects connecting to the same common point could find the BES status changing as additional generation projects materialize at the same collector</p>

Organization	Yes or No	Question 1 Comment
		<p>substation. SCE is concerned that this will discourage dispersed generation developers from pursuing common points of interconnection at collector substations built for such purpose in renewable rich areas. The aggregate total of the projects further down the interconnection queue could also trigger system upgrades, based on TPL studies for which the owners of these projects would be responsible.</p>
<p>Response: The SDT crafted Inclusions I2 and I4 to address the possibility of future, larger, individual dispersed power producing resources. If a single unit is greater than 20 MVA then it is covered by Inclusion I2 regardless of the type of generation. For smaller dispersed power producing resources Inclusion I4 takes precedence. The SDT believes that the distinction is clear. In addition, the SDT can't predict future building or interconnection plans. No change made.</p>		
<p>American Wind Energy Association</p>	<p>No</p>	<p>1. The technical rationale for not including individual generators in the BES definition is that these individual generators cannot affect BES reliability. Whatever technical rationale drove the drafting team's decision to not include the collector array components in the BES definition would also dictate that the individual turbines connected by that collector array should also not be included in the BES definition. We cannot think of any technical rationale that would justify including individual wind turbines in the definition but not including the collector array that aggregates those individual generators. Regardless, the burden for providing technical rationale should fall on the drafting team to demonstrate that including individual generators will improve electric reliability. That burden has not been met, and the standards drafting team has made no attempt to provide that rationale, despite repeated requests to do so. As explained below, that burden cannot be met, as there is no benefit to including individual generators, and including them in the definition is only likely to provoke significant confusion that distracts from real efforts to improve electric reliability. The only compelling reason for applying</p>

Organization	Yes or No	Question 1 Comment
		<p>BES standards to individual dispersed generators would be if there were a real risk of an abrupt common mode failure affecting a large share of the dispersed generators in a >75 MVA wind plant. However, per FERC Order 661A, wind turbine generators already comply with voltage and frequency ride-through standards that are far more stringent than those that apply to other types of generators. As a result, if a common mode failure caused by a grid disturbance were to affect the wind turbines in a >75 MVA wind plant, the impact on the wind plant would be irrelevant for grid reliability because the voltage and/or frequency deviation would have already caused most if not all of the conventional generators in the grid operating area to trip offline. While weather-driven changes in wind speed can significantly change the aggregate output of a wind plant, those changes in output occur too gradually to pose a risk to bulk power system reliability, and regardless such changes in output would not be regulated or mitigated by BES-relevant standards. No compelling rationale has been offered for why including individual dispersed wind turbine generators in the BES definition will improve grid reliability. Until one is offered, we will continue to oppose the inclusion of individual wind turbine generators in the BES definition.</p> <p>2. We request clarification on the intent of the FERC direction provided in Orders 773 and 773-A regarding inclusion of dispersed generation, as we disagree with the standards drafting team’s interpretation that those orders required the inclusion of individual dispersed generators. After careful study, it appears that the proposed standard for the I4 inclusion of dispersed generation is broader in scope than the intent as stated in the Orders. The critical language appears in Order 773-A, under item number 54. Here, FERC approves the dispersed power inclusion I4, “...finding it provides useful granularity...”, and that it agreed it is appropriate “to expressly cover</p>

Organization	Yes or No	Question 1 Comment
		<p>dispersed power producing resources utilizing a system designed primarily for aggregating capacity.” We believe that the second sentence should be further examined for proper intent. Our interpretation of this sentence is that collector systems aggregating dispersed power at a level of 75 MVA or more is the level of intended inclusion. This means that, in the example of a wind farm larger than 75 MVA, the application of the BES definition and all the requisite applicable standards is only at points where the aggregated capacity is greater than 75 MVA. This interpretation has several advantages: it is consistent with the current output threshold value; it does not establish a new, lower threshold for the BES definition; and it applies requirements where appropriate, i.e. equipment that carries 75 MVA and is therefore of sufficient size to be relevant to the reliability of the BES. Aggregator collection systems are designed to employ protection system equipment at the aggregation node, as well as operational output status monitoring equipment, and other equipment important to support grid reliability and monitoring at that aggregation point. Nowhere in the relevant FERC Orders does the language expressly require the inclusion of individual dispersed generators (PV panels, wind turbines, flywheels, microturbines, etc.). We believe that deletion of I4 (a) meets the intent of the FERC direction and properly supports grid reliability.</p> <p>3. FERC Order 773-A goes on to say in part 60 that, indeed, dispersed power producers with greater than 75 MVA nameplate capacity are already registered. For many registered entities across the country, the interpretation has been to apply the body of NERC standards at the point of aggregation. This regional entity interpretation of NERC standard applicability at the aggregation point is comparable to the interpretation described above, and is based on sound reliability thresholds and knowledge of dispersed power system design.</p>

Organization	Yes or No	Question 1 Comment
		<p>4. The term "individual resources" utilized in I4 (a) is unclear, and could refer to the wind plant as a whole. What constitutes an "individual resource?" More technically precise language should be utilized to specifically identify what resources are intended to be included per this bullet.</p> <p>5. In the last two postings, we and other commenters have asked specific technical questions that have not been answered. Instead, we have received only a generic reply that the SDT believes our concerns would best be addressed through clarification of the applicability of individual reliability standards. Please provide specific replies to the following questions: a. In the August 21, 2013 webinar, the BES definition drafting team indicated that its justification for the 75 MVA aggregating threshold in I4 (b) was that 75 MVA is the level that the drafting team believes that single failures resulting in the loss of generation could have an appreciable impact on the grid. It seems inconsistent that a 2 MVA individual dispersed generator is deemed significant to reliability but the equipment that is utilized to connect individual dispersed generators totaling to <75 MVA is deemed not significant to reliability. Please explain the technical rationale for concluding that an individual dispersed generating asset rated at 2 MVA is important to grid reliability but that a collector feeder which may impact up to 37 of these individual dispersed generating assets is not critical to reliability?</p> <p>b. Since the collector feeders are excluded from the BES definition so that there is not a contiguous BES connection between the individual dispersed generating asset and the grid, please explain the technical rationale for concluding that an individual 2 MVA dispersed generator at a facility rated at greater than 75 MVA has more impact on the BES than does an identical 2 MVA dispersed generator at a facility rated at less than 75 MVA? If the impact on grid reliability of both units is the</p>

Organization	Yes or No	Question 1 Comment
		<p>same, why is one considered BES and the other is not?</p> <p>c. In the Consideration of Comments document for the first draft of the Phase II BES definition, the Drafting Team acknowledged that there are both existing and pending reliability standards which likely will need to be reviewed and revised to clarify or correct the applicability of the standard requirements to dispersed generation. Please identify the reliability gaps being addressed by including individual dispersed generating assets within the BES definition. In other words, what specific existing or pending NERC Reliability Standard Requirements are perceived as being needed to be applied to individual dispersed generating assets to maintain grid reliability?</p> <p>6. We appreciate that the SDT acknowledges that numerous existing and pending standards will need to be reviewed and revised to clarify standard applicability to individual generating units. However, we do not believe that implementation of the BES definition should go forward until this review and revision of other standards has been completed. Relative to the approval and implementation time frames being discussed for the new BES definition, we do not believe any such action could be taken in a timely enough fashion to resolve industry uncertainty and avoid a major regulatory burden that would distract from efforts that actually improve grid reliability. Without that review, there will simply be too much ambiguity in the requirements as they apply to individual dispersed generating assets and there will be too much compliance effort spent on trying to apply these ambiguous requirements with no commensurate gain in reliability. As currently written, the definition will create much regulatory uncertainty in how auditors will assess an entity's compliance with these ambiguous requirements. Including individual dispersed generators in the BES definition will cause a major diversion away from efforts that improve BES reliability, as entities are forced to simultaneously seek relief via</p>

Organization	Yes or No	Question 1 Comment
		<p>the Exception Process to exclude individual dispersed generators that are insignificant from a reliability standpoint from their programs while at the same time attempting to modify their existing compliance programs to accommodate individual dispersed generators in the event that the exception applications are not approved. With more than 45,000 wind turbines installed in the U.S. and the vast majority of them in wind plants larger than 75 MVA, NERC will be faced with a huge backlog of exception requests for small distributed generators while Generator Owners with dispersed generating assets struggle to implement reliability standards that were never drafted with the intent of being applicable to anything but large scale generating stations. As a result, proceeding with the BES definition as currently drafted would actually impair, rather than improve, bulk electric system reliability. Examples of standards that were not drafted with small dispersed generators in mind include:</p> <ul style="list-style-type: none"> o PRC-005-2 Protection System testing - the relay test requirements were developed with large generators in mind, and differ significantly from requirements in FERC Order 661A, of 2005 that require wind plants to meet Low Voltage Ride-Through (LVRT) and Power Factor Design Criteria. These standards significantly change the protection scheme applied to individual turbines, and there is no clarity about how they should be applied. Wind turbine protection systems are often integral to the wind farm control system and the PRC-005-2 requirements were developed for protection equipment typically applied to large-scale generation, not wind farm control systems. o TOP-002 Normal Operations Planning - Under R14 of this standard, an unplanned outage for any individual wind turbine would require a status notification report from the GO to the TO/TOP. While such a report can be important for large central station generation, it would provide no value for a small individual wind turbine generator. This level of

Organization	Yes or No	Question 1 Comment
		<p>reporting, at typically less than 3 MVA, is much lower than any practical reliability threshold, and would simply result in a documentation effort with no value. Similar concerns exist for FAC-008-3, PRC-001-1, PRC-004-2a, PRC-019-1, PRC-024-1, and PRC-025-1, and other standards in which small-scale dispersed generators were not considered during the standards' development. Unless Inclusion I4 (a) is eliminated, or significantly revised to clarify that the only BES-relevant standards that apply to dispersed generators are those that affirmatively state that they apply to dispersed generators, we do not believe implementation of the new BES definition should go forward until all reliability standards have been reviewed and revised as necessary to clarify the applicability to individual dispersed generating assets. What reliability benefit is there to a "bright line" BES definition if there is not a corresponding clarity in the applicability of reliability standards to the elements deemed to be included in the BES?</p> <p>7. If the standards drafting team does not delete I4 (a) as requested above, we ask that I4 (a) be modified to clarify that the only BES-relevant standards that apply to individual dispersed generators are those that affirmatively state that they apply to dispersed generators. This will help avoid the harmful consequences of attempting to apply standards that were not written with dispersed generators in mind to dispersed generators.</p>
<p>Response: 1. Individual dispersed power producing resources are already included in the BES when they aggregate to greater than 75 MVA. Nothing in Phase 2 of this project has changed that fact which was established in earlier versions of the definition and clarified by FERC Orders 773 and 773-A. Technical justification must be supplied in order to remove something from an approved definition or standard. Simply stating that a unit doesn't impact reliability is not technical justification but a simple declaration of opinion without facts to back up the statement. No change made.</p> <p>2. The SDT does not agree with your interpretation of FERC's statements. FERC staff is represented on the SDT on an observer basis</p>		

Organization	Yes or No	Question 1 Comment
		<p>and has confirmed the SDT’s interpretation of the cited sentences. No change made.</p> <p>3. One of the main reasons for revising the BES definition was FERC’s desire for a bright-line standard that obviated regional discretion in interpreting and applying the definition. No change made.</p> <p>4. The SDT believes the term is clear and understood by the industry. No change made.</p> <p>5a. The SDT cannot assume that the intervening equipment cited is solely used as a collector system. There are too many variables and configurations across the continent to allow for the assumption that collector systems are only utilized for the sole purpose of aggregating dispersed power resources. Therefore on a ‘bright-line’ basis the SDT only included those portions of the collector system that are strictly utilized for delivering the aggregated capacity of the dispersed power resources to the interconnected transmission system. The intervening equipment cited is being treated in a similar fashion as Cranking Paths. The revised Reference Document will show specific examples. Where collector systems support the reliable operation of the surrounding interconnected transmission system and do not have a distribution function, those excluded facilities may be candidates for inclusion through the BES Exception Process. No change made.</p> <p>5b. Threshold values for generation were vetted in a report supplied to the SDT by the NERC Planning Committee and which can be found at: http://www.nerc.com/pa/Stand/Project%20201017%20Proposed%20Definition%20of%20Bulk%20Electri/bes_phase2_pc_report_final_20130306.pdf The threshold values identified in Inclusion I4 are comparable to the values identified in Inclusion I2. No change made.</p> <p>5c. Qualified dispersed power producing resources were included in the BES prior to the start of this project. Standards that were relevant at that time are still relevant today. The SDT did review existing standards and believes that no changes are necessary due to the revised definition. No change made.</p> <p>6. and 7. A SAR has been submitted to the NERC Standards Committee to address the applicability of small, dispersed generating resources within the body of the existing standards. (See: http://www.nerc.com/comm/SC/Agenda%20Highlights%20and%20Minutes/sc_20131017a_agenda_package.pdf - item 5.) Deleting those units from the definition at this time could cause a reliability gap. The proper procedure is to continue to include these units in the BES and allow the project initiated by the SAR to determine when such units can be safely removed from specific standard applicability. No change made.</p>
Midwest Reliability Organization	No	In the MRO opinion, the BES definition should not have included

Organization	Yes or No	Question 1 Comment
		<p>individual resources of a dispersed power producing resource. Instead, the Regions could have opted to include any that had a material impact to reliability - just the opposite of the way the BES definition was written. NERC talks of a guidance document in order to define those resources which are a part of the BES. This does not bear much weight when put towards a FERC approved definition and FERC approved Reliability Standards. The notion to use the BES implementation period of two years to work with the Standards Committee in order to revise the standards identified as requiring revisions doesn't seem workable. The implementation period is the time that has been identified for Registered Entities to bring their programs into compliance, it is not reasonable to expect the entities to expend their resources to bring their programs up to date with the possibility of the standards not being applicable. Nor is it reasonable to expect entities to postpone implementing programs in anticipation of standards being revised prior to the end of the implementation period.</p>
<p>Response: One of the main reasons for revising the BES definition was FERC's desire for a bright-line standard that obviated regional discretion in interpreting and applying the definition. Material impact studies do not lend themselves to a bright-line concept such as was desired by FERC. A SAR has been submitted to the NERC Standards Committee to address the applicability of small, dispersed generating resources within the body of the existing standards. (See: http://www.nerc.com/comm/SC/Agenda%20Highlights%20and%20Minutes/sc_20131017a_agenda_package.pdf - item 5.) Deleting those units from the definition at this time could cause a reliability gap. The proper procedure is to continue to include these units in the BES and allow the project initiated by the SAR to determine when such units can be safely removed from specific standard applicability. No change made.</p>		
<p>Tri-State Generation and Transmission Association, Inc.</p>	<p>No</p>	<p>Tri-State disagrees that FERC Orders 773 and 773-A approved the inclusion of individual dispersed generating units that are individually, or in aggregate, below the capacity that requires the owner to register as a Generator Owner. Inclusion I4 of the current draft of the BES</p>

Organization	Yes or No	Question 1 Comment
		<p>definition does require that under various scenarios. It is apparent from the comments to draft 2 of the Definition, and the questions during the webinar that was held by the drafting team, that Inclusion I4a) is disputed by a large percentage of registered entities and there is no technical basis for its inclusion in the definition. When asked during the webinar whether the drafting team had approached FERC regarding whether all individual dispersed units were to be included and about the fact that there was no technical justification for such inclusion, the drafting team simply stated that the FERC staff do not speak for the Commission. While it is be true that the staff do not speak for the Commission, all the drafting teams have FERC staff available that are able to convey the thoughts of the drafting teams and industry to the Commission. Tri-State agrees that the collection system for dispersed generation that aggregates to 75 MVA or more is important to include in the definition, since a single contingency could lead to loss of a large magnitude of generation. But loss of an individual small generator, oftentimes 2 MVA or less, has no direct consequence to the reliability of the BES.</p>
<p>Response: FERC staff is represented on the SDT on an observer basis and has consistently upheld Inclusion I4. No change made.</p>		
<p>EDP Renewables North America LLC</p>	<p>No</p>	<p>EDP Renewables North America LLC (EDPR NA) disagrees with the inclusion of individual dispersed power producing units (individual wind turbines and solar units (inverters)) in the definition of I4. Individual wind turbines have negligible or no effect on the reliability of the BES due to their generating capacity and the fact that they are intermittent resources. Inclusion of individual wind turbines would require a wind generator to consider each wind turbine in its compliance program for Standards such as PRC-005. Since there is no discrete equipment, outside of the turbine control system, in a wind turbine that could logically be included in a wind generator's</p>

Organization	Yes or No	Question 1 Comment
		<p>Protection System devices to be tested and maintained, the wind generator would be forced to seek exclusion under the Applicability section of other affected Standards. This would impose an administrative burden not only on the wind generation companies but also on each of the NERC Regional Entities, and indeed NERC itself, to consider each of the affected Registered Entity’s request for exclusion from Applicability with certain of the currently enforceable Standards. In addition, inclusion of individual wind turbines in I4 would require revisions to each of the applicable Reliability Standards, a lengthy process. Compliance with many standards including the following would be required for such low level BES elements: FAC-003, PRC-001, PRC-004, PRC-005, and VAR-002. The SDT is asking for technical reasons for disagreement with the language; however, EDPR NA believes that the SDT has not provided sound technical reasons for inclusion of individual dispersed power producing units in I4. Suggested language change: I4: The point at which the aggregation equals to a capacity threshold of 75 MVA or above.</p>
<p>Response: Individual dispersed power producing resources are already included in the BES when they aggregate to greater than 75 MVA. Nothing in Phase 2 of this project has changed that fact which was established in earlier versions of the definition and clarified by FERC Orders 773 and 773-A. Technical justification must be supplied in order to remove something from an approved definition or standard. Simply stating that a unit doesn’t impact reliability is not technical justification but a simple declaration of opinion without facts to back up the statement. No change made.</p>		
Pacific Gas and Electric Comapny	Yes	<p>We support the definition as posted and commend the drafting team for considering the comments from the industry and weighing those industry comments against the FERC directives. Many of the industry comments take a different direction and opinion from the FERC directives and we recognize that the definition is a compromise on the positions of all stake holders. It provides a bright line that will improve reliability and provide a consistent process across North</p>

Organization	Yes or No	Question 1 Comment
		America to address exceptions.
Duke Energy	Yes	Duke Energy supports the proposed clarifications to I4 made by the SDT.
Dominion	Yes	
Bonneville Power Administration	Yes	
American Electric Power	Yes	
Ameren	Yes	
South Carolina Electric and Gas	Yes	
Manitoba Hydro	Yes	
Idaho Power Co.	Yes	
Response: Thank you for your support.		

2. Are there any other concerns with this definition that haven't been covered in previous postings, questions and comments?

Summary Consideration: The SDT appreciates the concerns raised in the comments but found no compelling arguments to make any changes to the posted definition.

The SDT has retained the language of Inclusion I4 to clearly reflect the SDT's intent to include individual dispersed power producing units (such as wind and solar units) that aggregate to greater than 75 MVA, along with the collector system that connects these units, from the point they aggregate to greater than 75 MVA to the point of connection at 100kV or higher. While the SDT recognizes that some stakeholders do not agree with the inclusion of individual dispersed power producing units, FERC Orders 773 and 773-A approved the inclusion of these individual units. No stakeholder has provided a technical rationale to support removal of the individual units from the definition. The SDT believes that stakeholder concerns about inclusion of individual units may be addressed by specifying the Facilities to which an individual standard applies within the Applicability section of that standard.

The SDT will be revising the Reference Document once the Phase 2 project is completed and will post it for comments as was done with the Phase 1 version. Comments on specific sections and diagrams will be considered at that time.

Organization	Yes or No	Question 2 Comment
Alliant Energy	No	No - Alliant Energy still believes strongly that including individual dispersed generators (I4) as part of the BES does nothing to maintain/increase the reliability of the BES, and creates an extremely difficult compliance process. It will also create a very large backlog of exception requests, as most dispersed generator owners will request an exception for their generators.
<p>Response: Such units are only included when they aggregate to greater than 75 MVA and this fact hasn't changed with the revised definition. No change made.</p>		
Northeast Power Coordinating Council	No	
North Carolina Electric	No	

Organization	Yes or No	Question 2 Comment
Membership Corporation		
ACES Standards Collaborators	No	
SPP Standards Review Group	No	
Dominion	No	
Duke Energy	No	
Associated Electric Cooperative, Inc. - JRO00088	No	
PacifiCorp	No	
Bonneville Power Administration	No	
Pacific Gas and Electric Company	No	
Cowlitz PUD	No	
Consumers Energy	No	
Madison Gas and Electric Company	No	
South Carolina Electric and Gas	No	

Organization	Yes or No	Question 2 Comment
Manitoba Hydro	No	
WPSC	No	
MidAmerican Energy Company	No	
Midwest Reliability Organization	No	
Tri-State Generation and Transmission Association, Inc.	No	
Response: Thank you for your response.		
Arizona Public Service Company	Yes	Everything that has been excluded from the BES definition should also be excluded from I5 for reactive sources, because there is no impact to the BES. For example, if a radial system (E1) is excluded because it does not have an impact on the BES, a reactive resource connected at the end of the radial system is not likely to have an impact on the BES either.
Response: The SDT established Exclusion E4 to allow for exclusion of qualified reactive resources. No change made.		
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia	Yes	Southern Transmission believes that Exclusion E3 should include a limit on the size of a Local Network (LN). The facilities that will comprise these LNs are currently part of the BES and subject to all applicable standards. To allow these facilities to now be excluded from the BES without regard to some size limitation could result in negative impacts on the BES in the future. Southern Transmission believes that without placing a size limitation on such a network, a single contingency could result in significant flows across the BES to serve the LN from a different location. Additionally, there is concern that the exclusion has no requirement for power to

Organization	Yes or No	Question 2 Comment
		<p>only flow into the LN for N-1 conditions. Southern Transmission does agree that there may be limited locations where such an exemption could be appropriate, but would prefer to see the facilities initially included in the BES and have the Transmission Owner go through a review process with the Regional Reliability Organization to provide justification for classifying facilities as a LN.</p>
<p>Response: The SDT does not agree with the blanket statement that facilities that comprise a local network are necessarily part of the BES now and subject to applicable standards; that would need to be examined on a case-by-case basis. The SDT included the 300 kV voltage threshold limit which established a de facto size limitation on local networks. This concept was applied to real-world scenarios during the development of the definition and was accepted by the Commission (FERC) in Phase 1. The SDT has made it clear that local network criteria must be met for any and all operating conditions. No change made.</p>		
PPL NERC Registered Affiliates	Yes	<p>These comments are submitted on behalf of the following PPL NERC Registered Affiliates (PPL): Louisville Gas and Electric Company and Kentucky Utilities Company; PPL Electric Utilities Corporation, PPL EnergyPlus, LLC; PPL Generation, LLC; PPL Susquehanna, LLC; and PPL Montana, LLC. The PPL NERC Registered Affiliates are registered in six regions (MRO, NPCC, RFC, SERC, SPP, and WECC) for one or more of the following NERC functions: BA, DP, GO, GOP, IA, LSE, PA, PSE, RP, TO, TOP, TP, and TSP.</p> <p>1. The PPL NERC Registered Affiliates previously commented that the language of the proposed BES definition is subject to multiple interpretations and is therefore difficult to apply correctly without the Reference Document. The Reference Document is not complete or final for the Phase 2 BES definition, however. The Reference Document contains a disclaimer on p.1 that states "...this reference document is outdated. Revisions to the document will be developed at a later date to conform to the definition being developed in Phase 2." In response to the PPL NERC Registered Affiliates' concerns regarding the unavailability of a Reference Document to reflect the Phase 2 BES definition, the SDT stated in response that it "did not intend the posted version to represent a full implementation of Phase 2 as Phase 2 isn't complete." The PPL NERC Registered Affiliates are concerned by this response</p>

Organization	Yes or No	Question 2 Comment
		<p>because, unless it is clarified, the existing Phase 1 Reference Document could be interpreted to bring into the Phase 2 BES definition facilities that are not, and do not need to be, part of the BES. For example, the words in the existing Reference Document may imply that NERC registration for very small, standby, non-Blackstart Resource generators feeding the auxiliary buses of generation plants for emergency purposes is required. Specifically, Figure I2-5 of the Reference Document states that all units in a plant are part of the BES regardless of size, if the plant totals more than 75 MVA, if they "contribute to the gross aggregate rating of the site."The SDT said in response to our earlier comments regarding small standby diesels that, "The intent of the SDT is that the precedent will not change how the identified equipment is classified." However, Figure I2-5 of the Reference Document appears to do exactly that. If for example a 500 MW plant has a 2 MW diesel generator feeding the 4kV bus for emergency purposes (but not as a Blackstart Resource), the facility could be said to have a gross aggregate nameplate rating of 502 MW when the diesel is running - the aggregate nameplate rating has increased. Fig. I2-5 moreover includes in the BES units that feed transformers with a high-side voltage less than 100 kV, if their output is eventually stepped-up to a plant outlet that is > 100 kV. While, one could cite Fig. S1-9b,as indicating that generators feeding a bus that is exclusively an importer of power are not part of the BES, it would be far better to state matters explicitly in the first place. The contribute-to-aggregate-capability language of the present (and outdated) Reference Document does not appear in the BES definition and it is unclear. Item I2b of the BES definition should therefore be accompanied by a footnote saying that, "Standby and emergency generators that feed auxiliary buses are not considered in determining the plant/facility aggregate nameplate rating," or "Standby and emergency generators are not considered in determining the plant/facility aggregate nameplate rating if they feed an auxiliary bus that is a net importer of power." Further, an example should be added to the Resource Document that shows that Emergency Diesels and standby units that feed auxiliary buses that are net importers of power are not part of the BES (unless they are Blackstart Resources).</p>

Organization	Yes or No	Question 2 Comment
		<p>2. The PPL NERC Registered Affiliates also previously commented that the generic term "nameplate rating" should be replaced by the NERC-defined term "Facility Rating." The SDT declined to make this change, because it stated Facility Ratings, "fluctuate from period to period." The PPL NERC Registered Affiliates continue to believe that the use of the term "Facility Rating" is more appropriate. Consider for example four simple-cycle CTs rated at 19 MVA each (76 MVA total) that are connected to a 115 kV line through a single GSU rated at 72 MVA. This in a 72 MVA plant (because of the most limiting component) and would therefore not presently be part of the BES, but it could be pulled-in depending on whether one focuses on the nameplate rating of the generators or the most-limiting component (in this case the GSU). The Reference Document suggests that the former approach applies, because in every single depiction of generation units it cites only generator ratings and ignores GSU capability. Furthermore, using generator nameplate ratings can in certain circumstances lead to confusion because some generators (e.g., simple cycle CTs) can have multiple ratings (e.g., baseload, peaking and emergency ratings). To avoid this confusion, the proposed definition should be based on the "nameplate rating of the most-limiting component," which in the example here presented is 72 MVA (and is also the Facility Rating). Therefore, Inclusion I2 should be revised to read as follows: a) Gross nameplate rating of the most-limiting component of an individual unit greater than 20 MVA, Or, b) Gross aggregate nameplate rating of the most-limiting component(s) of a plant/facility greater than 75 MVA. Additionally, the Reference Document should be changed to provide at least one example of GSU MVA values setting the most limiting criterion.</p>
<p>Response: The SDT will be revising the Reference Document once the Phase 2 project is completed and will post it for comments as was done with the Phase 1 version. Your comments on specific sections and diagrams will be considered at that time.</p> <p>The SDT believes that the continued use of the nameplate rating is a clear, appropriate, and understood term that established a consistent bright-line approach to identifying BES Elements. No change made.</p>		
American Electric Power	Yes	AEP cannot vote in the affirmative on this project as long as BES elements (measured

Organization	Yes or No	Question 2 Comment
		<p>for compliance) are as granular as the individual dispersed power resource. We do not see the reliability benefit (nor has the project team provided technical justification) of tracking all of the compliance elements for individual wind turbines when the focus should be placed on the aggregate of the facility. Does the RC want to be notified of an outage of each individual wind turbine in real-time, or a loss of significant portion of the wind farm? If we are not careful, we will have entities at these resources and others monitoring them (BAs, TOPs, RCs) focusing on minor issues that will distract from more relevant reliability needs.</p>
<p>Response: Individual dispersed power producing resources are already included in the BES when they aggregate to greater than 75 MVA. Nothing in Phase 2 of this project has changed that fact which was established in earlier versions of the definition and clarified by FERC Orders 773 and 773-A. Technical justification must be supplied in order to remove something from an approved definition or standard. Simply stating that a unit doesn't impact reliability is not technical justification but a simple declaration of opinion without facts to back up the statement. No change made.</p>		
Ameren	Yes	<p>(1) When the SDT updates the Reference (Guidance) Document, we request a couple of additions to help clarify Exclusion E3. We ask the SDT to include System Diagram examples with a 138kV Local Network (LN) for which Real Power only flows in (from 138 to 69kV) and embedded within this LN is a 69kV network with multiple generating units. Note that none of these generators are Blackstart Resources or Dispersed power resources. We believe that the left side of your Figure S1-9b could be adapted to do this. Please add the two following examples: (a) First, a 69kV network that serves load at multiple substations and has three different substations each with a single 13.8/69kV GSU for a single 19MVA generator with an aggregate capacity of (3 x 19 MVA =) 57MVA within the entire 138kV LN; and (b) Second, the same diagram as item 1a plus one additional single 13.8/69kV GSU for a single 50MVA generator to provide an aggregate capacity of (3 x 19 MVA + 50 MVA =) 107MVA within the entire 138kV LN . Our understanding is that the 138kV leads to the 138/69kV transformers are all excluded via Exclusion E3; and that neither the entire 69kV network nor any of the embedded generation (aggregate 57 MVA for the first example or 107MVA for the second example) should be included by any BES</p>

Organization	Yes or No	Question 2 Comment
		<p>Inclusion.</p> <p>(2) When the SDT updates the Reference (Guidance) Document, we request one additional item to help clarify Inclusion I2. We ask the SDT to add a new Figure I2-7 similar to Figure I2-6. In this new Figure I2-7, we request that the >100kV / <100kV transformer on the right be removed and connected to another <100 kV location in the network. The generator on the right with GSU high side <100kV should be changed from 25 MVA to 88 MVA. This generator is neither a black-start resource nor a dispersed power resource and therefore should not be included by Inclusions I3 or I4, and our understanding is that the 88 MVA generator is also not included by Inclusion I2.</p>
<p>Response: The SDT will be revising the Reference Document once the Phase 2 project is completed and will post it for comments as was done with the Phase 1 version. Your comments on specific sections and diagrams will be considered at that time.</p>		
NIPSCO	Yes	<p>We appreciate your consideration of our previous comments and a draft interpretation. However, since such interpretations and a guidance document are already being developed for this draft standard, more clarification is probably needed within the standard itself.</p>
<p>Response: The SDT believes that the definition is clear. The Reference Document simply provides diagrams that make it easier to see how the SDT intended the definition to be implemented and does not represent interpretations of the definition. No change made.</p>		
Xcel Energy	Yes	<p>We appreciate that the BES SDT acknowledges that numerous existing and pending standards will need to be reviewed and revised to clarify standard applicability to individual generating units. However, we do not believe that implementation of the BES definition should go forward until this review and revision of other standards has been completed. Therefore, we recommend the implementation plan for the BES definition be contingent upon the completion of modification to applicable GO/GOP requirements. Otherwise, there will simply be too much ambiguity in the requirements as they apply to individual dispersed generating assets, there will be too much compliance effort spent on trying to apply these ambiguous requirements.</p>

Organization	Yes or No	Question 2 Comment
		with no commensurate gain in reliability, and in the end many of the requirements will change and possibly no longer apply.
<p>Response: A SAR has been submitted to the NERC Standards Committee to address the applicability of small, dispersed generating resources within the body of the existing standards. (See: http://www.nerc.com/comm/SC/Agenda%20Highlights%20and%20Minutes/sc_20131017a_agenda_package.pdf - item 5.) Deleting those units from the definition at this time could cause a reliability gap. The proper procedure is to continue to include these units in the BES and allow the project initiated by the SAR to determine when such units can be safely removed from specific standard applicability. The SDT did complete a review of existing standards to see if changes were required to those standards due to the revised definition. The SDT did not find any standards or requirements that needed to be changed. No change made.</p>		
Southern California Edison Company	Yes	The 75 MVA hurdle is nothing more than an arbitrary number being used to denote/provide a threshold for identifying the amount of generation that has a significant effect on the BES. This number does not consider the most significant part of what should be encapsulated in the definition which is what the “function” of the facility(ies) are with respect to a bulk electric system operated as an integrated network.
<p>Response: The 75 MVA threshold is the same value that is in force today – nothing in this project has changed that value. The MVA approach is consistent with the bright-line approach to the definition suggested by FERC. Depending on interpretations of functionality leaves the door open for regional discretion in applying the definition. Removal of such discretion and a uniform continent-wide approach to applying the definition was one of the main reasons for embarking on this project. No change made.</p>		
Alcoa, Inc.	Yes	An additional concern the standards development team has not adequately addressed is the technical justification for placing compliance requirements on newly registered industrial facilities resulting from the adoption of this definition.
<p>Response: The SDT believes that the Phase 2 definition is consistent with the current definition and language in the ERO Statement of Compliance Registry Criteria as it applies to the industrial facilities and does not represent a change in what facilities should or should not be considered part of the BES. On a case-by-case basis, an entity can always use the exception process to address situations where the bright-line definition doesn’t lend itself to what the entity considers the correct delineation of its equipment.</p>		

Organization	Yes or No	Question 2 Comment
<p>Alternatively, if a broader review of standards applicability is seems to be necessary for a specific sub-set of equipment/configurations, the affected entities may submit a Standards Authorization Request (SAR) to address the identified issue.</p>		
Idaho Power Co.	Yes	<p>While we still do not agree with the categorical inclusion of individual dispersed power producing units into the BES, we do recognize the SDT's good faith effort to comply with FERC Orders 773 and 773-A.</p> <p>We understand that modeling of dispersed power producing resources in WECC base cases will follow regional requirements governed by regional standards.</p>
<p>Response: Thank you for your support.</p>		
Modesto Irrigation District	Yes	<p>I voted No because I disagree with the criteria proposed for defining the BES. The BES criteria should be the criteria developed by the WECC BES Definition Task Force in the 2009-2010 time frame, which is based on extensive engineering studies. These extensive studies showed that system elements with a material impact to the regional interconnected system (i.e., BES elements), are those elements at which the available short circuit MVA exceeds 6,000 MVA. This is a very simple criteria based on sound engineering studies, and quite unlike the current proposed definition of the BES that we are voting on today. Thank you.</p>
<p>Response: Regional work such as the WECC BES Definition Task Force studies were considered as input to the SDT's deliberations in Phase 1 of the BES definition project. However, material impact studies are not conducive to the bright-line approach that FERC directed and Phase 1 of this project which was accepted by industry, the Board, and the Commission.</p>		
Seminole Electric Cooperative, Inc.		<p>Additionally, Seminole is re-submitting the following comments from past ballots, because Seminole still believes that these comments are practical requests that should be incorporated into the BES definition.(1) The terms "plant" and "facility" are not defined and are ambiguous. Please provide quantitative and/or qualitative factors that an entity can utilize in determining what is a plant or facility. See Inclusion I2. Seminole acknowledges that there is draft guidance covering these terms; however, Seminole reasons that descriptive language covering these terms</p>

Organization	Yes or No	Question 2 Comment
		<p>should be passed in conjunction with the BES definition.</p> <p>(2) The following note will be placed in the Reference document: "Dispersed power producing resources are small-scale power generation technologies using a system designed primarily for aggregating capacity providing an alternative to, or an enhancement of, the traditional electric power system." Please strike the phrase "or an enhancement of," as it is more of a persuasive statement than an objective statement.</p> <p>(3) In Exclusion E1(c), please clarify that reactive devices, such as capacitor banks, can also be included in this section. Reactive devices are differentiated from real power devices in Inclusion I2, so we request clarification that reactive devices can be included in Exclusion E1(c), i.e., please add clarification to the definition.</p>
<p>Response: 1. The SDT believes that the majority of the industry is comfortable with the terminology and that the Reference Document adequately covers the concerns cited in the comment. No change made.</p> <p>2. The SDT will consider your comment when it revises the Reference Document.</p> <p>3. The SDT established Exclusion E4 to address the potential exclusion of qualified reactive resources. No change made.</p>		
<p>Hoosier Energy Rural Electric Cooperative, Inc.</p>		<p>The proposed language in Inclusion I4 further complicates the BES definition. According to the Phase 1 definition, dispersed power producing units would only be included if the units reached the 75 MVA aggregate threshold. There is nothing in the Phase 1 definition that would include collector system equipment. The Phase 2 definition is problematic because there is uncertainty regarding the scope of equipment that that would be included as a portion of the collector system. This ambiguity has raised concerns that regional compliance staff may ultimately determine a different set of equipment is included in the BES than the registered entity will leaving the burden on the registered entity to argue why certain elements should not be included in the BES. This will lead to inconsistent compliance outcomes. We cannot support a definition with vague and ambiguous language that could result in negative compliance implications during registration, audits, and</p>

Organization	Yes or No	Question 2 Comment
		enforcement processes. Furthermore, we do not believe any part of the collector system should be included in the definition.
<p>Response: FERC Orders 773 and 773-A directed the SDT to consider collector systems as part of Phase 2. The SDT has addressed those collector systems in a clear fashion that leaves no room for arbitrary determinations. Furthermore, no change has been made to the definition as to the inclusion of individual units in Phase 2 – units are still only included if they aggregate to greater than 75 MVA. No change made.</p>		

END OF REPORT