

## Comment Report

**Project Name:** 2016-01 Modifications to TOP and IRO Standards SAR  
**Comment Period Start Date:** 1/22/2016  
**Comment Period End Date:** 2/22/2016

There were 22 sets of responses representing 8 of the Industry Segments as shown in the table on the following pages.

## Questions

1. Do you agree with the proposed scope for Project 2016-01 as described in the SAR? If you do not agree, or if you agree but have comments or suggestions for the project scope please provide your recommendation and explanation.
2. Provide any additional comments for the SDT to consider, if desired.

**Summary Consideration.** The SDT thanks all commenters. A summary of comments and the SDT's response is provided below:

- **Terms used in FERC Order 817 Directives.** Some commenters recommended the scope of the project include explaining the meaning of *redundant and diverse routing* or other terms used in Order No. 817 related to this project; a commenter recommended developing a Standards Authorization Request to develop definition(s) for some terms. The SDT believes the project scope as written in the SAR provides flexibility to draft clear requirements that are supported by appropriate Rationale and/or Guidelines and Technical Basis section guidance. If new or revised definitions are needed, the SDT believes this is also covered under the current SAR.
- **Defined term *Operating Instruction*.** A commenter recommended reviewing use of the term in TOP-001-3 due to differences with the currently-enforceable standard (TOP-001-1a). The SDT does not believe there is new information since industry approval of TOP-001-3 that warrants reviewing the use of the term *Operating Instruction* in Project 2016-01.
- **Concerns that the proposed standards will not benefit reliability.** Some commenters argue that new requirements are not necessary to address the objectives outlined in the SAR because they believe the reliability issues are already covered (through existing requirements, BES definition, certification process, and/or other obligations and practices). While some commenters believe the existing requirements support the directives in Order No. 817, some entities may not interpret existing requirements in a manner that would address the directives. The SDT notes that the directives were issued by FERC following considerable stakeholder commenting on the Notice of Proposed Rulemaking (NOPR) associated with Order No. 817. Arguments expressed by SAR commenters do not contain any new information that was not part of NOPR proceedings. Thus

the SDT believes the SAR scope is appropriate for addressing FERC's concerns through development of results-based requirement(s) that meet the directives.

- **Reliability guideline as an alternate approach to meeting the reliability objectives.** A commenter recommended the SDT consider development of a reliability guideline as an equally efficient and effective method for meeting the directives. The SDT does not believe a reliability guideline by itself provides obligations for entities to address the directives.
- **Specific regional concerns.** An entity raised concerns with approved TOP-001-3 Requirement R10 due to challenges in the ERCOT region with TOP monitoring facilities outside its operating area. The SDT does not believe there is new information since industry approval of TOP-001-3 and therefore does not support expanding the scope of Project 2016-01.
- **Consider two projects.** A commenter observed that the subject matter of the directives may be suited for two separate projects. The SDT considered the recommendation and believes the best way to address the directives is through a single project. This avoids overlapping efforts to revise standards concurrently.
- **Suggestions for standards development.** Several commenters offered suggestions for the SDT to consider in developing the standards in this project. The SDT reviewed all comments and will consider the recommendations.

Group Information

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
ACES Power Marketing	Ben Engelby	6		ACES Standards Collaborators - TOP/IRO Project	Chip Koloini	ACES Power Marketing	3,5	SPP RE
					Bob Solomon	ACES Power Marketing	1	RF
					Shari Heino	ACES Power Marketing	1,5	Texas RE
					Mike Brytowski	ACES Power Marketing	1,3,5,6	MRO
					Ginger Mercier	ACES Power Marketing	1,3	SERC
					Ellen Watkins	ACES Power Marketing	1	SPP RE
MRO	Emily Rousseau	1,2,3,4,5,6	MRO	MRO-NERC Standards Review Forum (NSRF)	Joe Depoorter	MRO	3,4,5,6	MRO
					Chuck Lawrence	MRO	1	MRO
					Chuck Wicklund	MRO	1,3,5	MRO
					Dave Rudolph	MRO	1,3,5,6	MRO
					Kayleigh Wilkerson	MRO	1,3,5,6	MRO
					Jodi Jenson	MRO	1,6	MRO
					Larry Heckert	MRO	4	MRO

					Mahmood Safi	MRO	1,3,5,6	MRO
					Shannon Weaver	MRO	2	MRO
					Mike Brytowski	MRO	1,3,5,6	MRO
					Brad Perrett	MRO	1,5	MRO
					Scott Nickels	MRO	4	MRO
					Terry Harbour	MRO	1,3,5,6	MRO
					Tom Breene	MRO	3,4,5,6	MRO
					Tony Eddleman	MRO	1,3,5	MRO
					Amy Casucelli	MRO	1,3,5,6	MRO
Seattle City Light	Ginette Lacasse	1,3,4,5,6	WECC	Seattle City Light Ballot Body	Pawel Krupa	Seattle City Light	1	WECC
					Dana Wheelock	Seattle City Light	3	WECC
					Hao Li	Seattle City Light	4	WECC
					Bud (Charles) Freeman	Seattle City Light	6	WECC
					Mike haynes	Seattle City Light	5	WECC
					Michael Watkins	Seattle City Light	1,3,4	WECC
					Faz Kasraie	Seattle City Light	5	WECC

					John Clark	Seattle City Light	6	WECC
New York Independent System Operator	Gregory Campoli	2		ISO/RTO Standards Review Committee	Gregory Campoli	New York Independent System Operator	2	NPCC
					Ben Li	New York Independent System Operator	2	NPCC
					Kathleen Goodman	New York Independent System Operator	2	NPCC
					Mark Holman	New York Independent System Operator	2	NPCC
					Charles Yeung	New York Independent System Operator	2	SPP RE
					Terry Bilke	New York Independent System Operator	2	MRO
					Nathan Bigbee	New York Independent	2	Texas RE

						System Operator		
					Ali Miremadi	New York Independent System Operator	2	WECC
Dominion - Dominion Resources, Inc.	Randi Heise	3,5,6		Dominion - RCS	Larry Nash	Dominion - Dominion Resources, Inc.	1	SERC
					Louis Slade	Dominion - Dominion Resources, Inc.	6	SERC
					Connie Lowe	Dominion - Dominion Resources, Inc.	3	RF
					Randi Heise	Dominion - Dominion Resources, Inc.	5	NPCC
Northeast Power Coordinating Council	Ruida Shu	1,2,3,4,5,6,7	NPCC	RSC no ISO-NE HQ and NextEra	Paul Malozewski	Northeast Power Coordinating Council	1	NPCC
					Guy Zito	Northeast Power	NA - Not Applicable	NPCC









						Coordinating Council		
					Connie Lowe	Northeast Power Coordinating Council	4	NPCC
Southwest Power Pool, Inc. (RTO)	Shannon Mickens	2	SPP RE	SPP Standards Review Group	Shannon Mickens	Southwest Power Pool, Inc. (RTO)	2	SPP RE
					Jason Smith	Southwest Power Pool, Inc. (RTO)	2	SPP RE
					Jim Nail	Southwest Power Pool, Inc. (RTO)	3,5	SPP RE
					J. Scott Williams	Southwest Power Pool, Inc. (RTO)	1,4	SPP RE
					Kevin Giles	Southwest Power Pool, Inc. (RTO)	1,3,5,6	SPP RE
					Ellen Watkins	Southwest Power Pool, Inc. (RTO)	1	SPP RE
					Sing Tay	Southwest Power Pool, Inc. (RTO)	1,3,5,6	SPP RE

					John Allen	Southwest Power Pool, Inc. (RTO)	1,4	SPP RE
					Mike Kidwell	Southwest Power Pool, Inc. (RTO)	1,3,5	SPP RE
					Don Schmit	Southwest Power Pool, Inc. (RTO)	1,3,5	MRO

**1. Do you agree with the proposed scope for Project 2016-01 as described in the SAR? If you do not agree, or if you agree but have comments or suggestions for the project scope please provide your recommendation and explanation.**

**Thomas Foltz - AEP - 3,5**

**Answer** No

**Comment**

AEP recognizes FERC's concerns regarding identification of non-BES facilities, however, there would be far more flux involved in their identification and real-time monitoring (as suggested by the SAR) than may be widely understood or appreciated. This subset of non-BES facilities would change quite frequently, and creating obligations to govern such frequently changing identification and real-time monitoring would likely require much effort, with little to no improvement in reliability. Rather than developing additional requirements which would not likely be beneficial, we believe a more prudent approach would be to focus on the desired end state itself. We believe the argument can be made that our existing obligations, when considered as a whole, could collectively appease FERC's concerns.

**Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - SPP RE, Group Name SPP Standards Review Group**

**Answer** No

**Comment**

We have no concern with the Commission's directive that there should be some additional language in reference to TOP-001-3 Requirement R10. Also, we agree that IRO-002-4 Requirement R3 can serve as a foundation for that particular language. We also suggest that the drafting team follow the Functional Model Advisory Group's efforts very closely so that any clarified functional obligations are captured and consistent with the Functional Model. Additionally, we would suggest the drafting team to clarify that the non-BES facilities that the TOP is required to monitor be only those facilities that were identified by the Reliability Coordinator in IRO-002-4.

As for the Commission's suggestion of adding clarity to the term 'redundant infrastructure', our review group suggests the SDT consider developing a Standards Authorization Request (SAR) to create a definition for this particular term that can be added to the

NERC Glossary, Rules of Procedure, and Functional Model. When the term “Alternative Interpersonal Communication” was created as a part of COM-001-2, the SDT included within the definition that the capability must use a different infrastructure. The definition of ‘redundant infrastructure’ could include the requirement to be diversely routed.

We don’t feel it is appropriate to have a blanket requirement for the TOP to be required to have fully redundant data exchange capabilities with each entity it has identified it needs data from. The Transmission Operator may only receive a handful of points from certain entities, and there may be minimal impact to reliability if that data was lost. Any new requirement or change to R19 and R20 should provide the Transmission Operator the ability to identify and declare the entities with which it needs to have fully redundant and diversely routed data exchange capability.

In addition to the directives by FERC to modify the TOP and IRO standards, we suggest that the SDT review the use of the term ‘Operating Instruction’ as found in the TOP and IRO standards. It appears that the COM-002-4 Drafting Team did not intend to do a direct replacement of the term ‘Directive’ with ‘Operating Instruction’. However, it appears the TOP-001-3 R3 and R4 are zero tolerance on compliance with EACH Operating Instruction. Previously the wording in the Standards required zero tolerance on the receipt of Directives. The definition of Operating Instruction is much broader and can be interpreted to include some system to system communications that were not previously considered to be Directives. We do not believe the intent of the term Operating Instruction in TOP-001-3 is consistent with the definition and use of the term in COM-002-4.

**Joshua Smith - Oncor Electric Delivery - 1 - Texas RE**

<b>Answer</b>	No
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**Comment**

The suggested revision of approved NERC Standard TOP-001-3, specifically Requirement 10, to require real-time monitoring of non-BES facilities is not needed and is already covered by the existing language. Requirement 10.1 states; "Within its Transmission Area, monitor facilities and the status of Special Protection Systems, and". R10.1 requires TOPs to monitor facilities to determine SOL exceedances, which allows the TOP to decide which "Facilities" it deems necessary to meet the task required by R10. By adding the requirement to real-time monitor non-BES facilities, the Standard requires how something should be done instead of stating what is required and allowing the utility to decide how.

**Jennifer Losacco - NextEra Energy - Florida Power and Light Co. - 1 - FRCC**

**Answer** No

**Comment**

Florida Power and Light (FPL) appreciates the efforts of NERC drafting a SAR proposing changes to TOP-001-3 and IRO-002-4 to address concerns expressed during the FRCC Order No. 817. For the three specific concerns mentioned, Monitoring non-Bulk Electric Systems facilities, FPL believes the new TOP-001-3 standard and the BES definition addresses this concern and do not feel a standard revision is necessary. In the case of Redundancy and Diverse Routing of Data Exchange Capabilities, FPL believes the revised TOP and IRO standards adequately address redundancy and diverse routing of data exchange capabilities and do not feel additional standard revisions are necessary. Lastly, in the testing of the Alternative or Less Frequently Used Data Exchange Capability, FPL believes RCs, TOPs and BAs should have protocols to ensure their alternative data exchange capabilities are viable in order to comply with the revised TOP and IRO standards and in good utility practice; and do not feel additional standard requirements are necessary.

**Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2**

**Answer** Yes

**Comment**

ERCOT joins in the comments of the IRC Standards Review Committee (SRC).  
The SRC agrees that a drafting team needs to address the directives issued by FERC in Order No 817.

**William Temple - PJM Interconnection, L.L.C. - 2 - RF**

**Answer** Yes

**Comment**

PJM supports the comments submitted by the ISO/RTO Standards Review Committee (SRC).

**Gregory Campoli - New York Independent System Operator - 2, Group Name** ISO/RTO Standards Review Committee

**Answer** Yes

**Comment**

: The SRC agrees that a drafting team needs to address the directives issued by FERC in Order No 817.

**Ben Engelby - ACES Power Marketing - 6, Group Name** ACES Standards Collaborators - TOP/IRO Project

**Answer** Yes

**Comment**

We agree that the scope of the SAR is drafted to address the FERC directives in Order No. 817. We ask the SDT to strongly consider cost implications and to explore equally efficient and effective alternatives to developing additional requirements. Such alternatives could include glossary term revisions, identifying existing standards that already address the directive, or the development of a reliability guideline.

**Mike Smith - Manitoba Hydro - 1,3,5,6**

**Answer** Yes

**Comment**

The SDT directive to “revise TOP-001-3 R10 to require real-time monitoring of non-BES facilities” needs to be developed using clear criteria delineating when monitoring is required and what approach or parameters would constitute adequate monitoring.



**Jared Shakespeare - Peak Reliability - 1**

**Answer** Yes

**Comment**

**Mark Kenny - Eversource Energy - 1,3**

**Answer** Yes

**Comment**

**Si Truc Phan - Hydro-Quebec TransEnergie - 1 - NPCC**

**Answer** Yes

**Comment**

**Nicolas Turcotte - Hydro-Quebec TransEnergie - 1**

**Answer** Yes

**Comment**

**Amy Casuscelli - Xcel Energy, Inc. - 1,3,5,6 - MRO,WECC,SPP RE**

**Answer** Yes

**Comment**

<b>Randi Heise - Dominion - Dominion Resources, Inc. - 3,5,6, Group Name Dominion - RCS</b>	
<b>Answer</b>	Yes
<b>Comment</b>	
<b>Emily Rousseau - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO-NERC Standards Review Forum (NSRF)</b>	
<b>Answer</b>	Yes
<b>Comment</b>	
<b>Jamison Dye - Bonneville Power Administration - 1,3,5,6 - WECC</b>	
<b>Answer</b>	Yes
<b>Comment</b>	
<b>Laura Nelson - IDACORP - Idaho Power Company - 1</b>	
<b>Answer</b>	Yes
<b>Comment</b>	
<b>Leonard Kula - Independent Electricity System Operator - 2</b>	
<b>Answer</b>	Yes
<b>Comment</b>	

<b>Rachel Coyne - Texas Reliability Entity, Inc. - 10</b>	
<b>Answer</b>	Yes
<b>Comment</b>	
<b>Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7 - NPCC, Group Name RSC no ISO-NE HQ and NextEra</b>	
<b>Answer</b>	Yes
<b>Comment</b>	

**Colby Bellville - Duke Energy - 1,3,5,6 - FRCC,SERC,RFC, Group Name Duke Energy**

**Comment**

Duke Energy has several thoughts regarding this project we would like to relay to the drafting team.

-Regarding redundancy and diverse routing of data exchange capabilities, Duke Energy requests that the drafting team clearly define what is meant by “data exchange capabilities”. This terminology seems rather vague at this point, and could use an adequate definition to clear up any possible ambiguity. Also, previously a requirement was located in the COM standards that dealt with the necessity of redundant and diverse telecommunications, which was problematic for some in the industry based on a lack of common understanding as to what redundant and diverse actually entailed. This concept of redundant and diverse telecommunications was removed from the COM standards, and to bring the same phrase back in another standard, is likely to only continue the confusion without a common understanding throughout the industry as to what this would mean. Lastly, we assume that the data that this would pertain to is Real-time data, and we question whether an entire path (substation to primary control center) can ever be entirely redundant.

-Duke Energy requests that the drafting team take great care in clarifying/describing what will be expected of the industry regarding the monitoring on non-BES facilities as necessary. Placing this into a NERC standard without clearly putting defined parameters, and writing it so that entities will fully understand the instances in which certain facilities will need to be monitored especially with the great diversity of systems throughout the grid, will be challenging. Clearly defined parameters are necessary, in that it is not feasible to expect entities to monitor all non-BES facilities.

-Regarding the testing of less frequently used data capabilities, Duke Energy is concerned with the vagueness of the phrase “less frequently used”, and requests that the drafting team clearly define what should be considered “less frequently used capabilities”.

**2. Provide any additional comments for the SDT to consider, if desired.**

**Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7 - NPCC, Group Name RSC no ISO-NE HQ and NextEra**

**Comment**

The SAR should allow the SDT to explain the meaning of “diverse routing” and “redundancy”. A glossary term may not be needed but an explanation of the intent will be required to facilitate compliance.

Also, as a general comment, FERC wanted to limit “redundancy and diversity” to data exchange between RC, TOP and BA so the SDT will need to avoid capturing other entities like TO and DP into this requirement.

**Ben Engelby - ACES Power Marketing - 6, Group Name** ACES Standards Collaborators - TOP/IRO Project

**Comment**

1. We recommend that the SDT conduct a technical conference relating to this project to explore any equally efficient and effective alternatives in lieu of modifying the existing standards. This would allow industry an opportunity to provide initial feedback prior to any proposed standard revisions. We also recommend that if the SDT agrees with this approach, that it considers broadcasting the technical conference via a webinar for industry stakeholders who are unable to attend in person. A recent technical conference held for NERC Project 2007-06.2 was limited to 20 people and was not open to a large majority of industry to attend.
2. For TOP-001-3 R10, we have concerns with the proposal of expanding the TOP’s responsibilities for monitoring non-BES facilities. The SDT could consider alternatives including references to the existing BES exception process or the development of a reliability guideline. In the event that the SDT decides to pursue development of the requirement instead of identifying an alternative, we recommend limiting the scope of monitoring non-BES facilities to only the facilities that were identified by the Reliability Coordinator in IRO-002-4 and agreed to by the Transmission Operator.
3. For TOP-001-3 R19 and R20 relating to “redundant infrastructure,” the SDT should consider developing a formal glossary term to provide clarity for the requirements. Cost considerations should also be factored into the development of these requirements.
4. Thank you for the opportunity to comment.

**Gregory Campoli - New York Independent System Operator - 2, Group Name** ISO/RTO Standards Review Committee

**Comment**

The SRC would like NERC and the drafting team to consider alternatives to a reliability standard to address the directives included in the Order. The types of activities contemplated in the SAR are upstream and act as controls around registered entities performing core reliability functions, such as responding to IROL's or developing emergency plans. Redundant and diversely routed data exchange capabilities, in addition to testing of alternate or less frequently used data exchange capabilities are not core reliability requirements. Moreover, given the relatively static nature of these types of activities (e.g., establishing communications equipment), RC/BA/TOP Certification is a more appropriate program for the ERO to use to support reliable operations than auditing.

Also, the SRC would like the drafting team to consider clarifying "redundant and diversely routed data exchange capabilities". The SRC asks the SDT to consider whether data that goes to two independent control sites satisfy the concepts of redundant and diversely routed or does the SDT intend to require two independent feeds to each cite?

The SRC would also like the SDT to consider the applicability of non-BES Elements to the standards process. NERC is close to implementing an improved BES Definition on July 1, 2016, that will provide greater clarity to facilities that will impact the interconnected transmission system. The SDT should consider how this definition can capture elements that may not meet the core BES definition but should be BES going forward.

#### **Joshua Smith - Oncor Electric Delivery - 1 - Texas RE**

##### **Comment**

TOP-001-3 R10 as proposed requires each TOP shall monitor Facilities and the status of SPSs within its TOP area and obtain and utilize status, voltages and flow data for facilities and status of SPS outside its TOP area. The ERCOT region is structured to support a deregulated market in which ERCOT monitors facilities for all TOPS and has a centralized view of the entire region to maintain reliability. TOPs operating within ERCOT currently do not have the technical capability to monitor facilities of neighboring TOPs. This requirement imposes a "one size fits all" regional structure which would place an unreasonable financial burden on all TOPs to both install and maintain additional hardware in each station or install and maintain multiple ICCPs between control centers. This requirement would place this financial burden on TOPs for nothing more than to replicate an RC function with no benefit to the BES. At no point in proposed Standard TOP-001-3 does it require TOs to supply neighboring TOs with this data. Oncor requests R10 be reworded to provide flexibility for region structure.

**Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2****Comment**

ERCOT joins in the comments of the IRC Standards Review Committee (SRC).

The SRC would like NERC and the drafting team to consider alternatives to a reliability standard to address the directives included in the Order. The types of activities contemplated in the SAR are upstream and act as controls around registered entities performing core reliability functions, such as responding to IROL's or developing emergency plans. Redundant and diversely routed data exchange capabilities, in addition to testing of alternate or less frequently used data exchange capabilities are not core reliability requirements. Moreover, given the relatively static nature of these types of activities (e.g., establishing communications equipment), RC/BA/TOP Certification is a more appropriate program for the ERO to use to support reliable operations than auditing.

Also, the SRC would like the drafting team to consider clarifying "redundant and diversely routed data exchange capabilities". The SRC asks the SDT to consider whether data that goes to two independent control sites satisfy the concepts of redundant and diversely routed or does the SDT intend to require two independent feeds for each data sample to each site?

The SRC would also like the SDT to consider the applicability of non-BES Elements to the standards process. NERC is close to implementing an improved BES Definition on July 1, 2016, that will provide greater clarity to facilities that will impact the interconnected transmission system. The SDT should consider how this definition can capture elements that may not meet the core BES definition but should be BES going forward.

**Thomas Foltz - AEP - 3,5****Comment**

Though the directives given by FERC potentially impact the same standard(s), and the "identification of non-BES elements" and "redundant data exchange capabilities" emanate from the same FERC Order, the topics appear disparate enough to drive two separate projects. Would it be preferable to create two separate project teams to pursue the FERC directives, rather than combine multiple, dissimilar directives into a single project?

**Ginette Lacasse - Seattle City Light - 1,3,4,5,6 - WECC, Group Name** Seattle City Light Ballot Body**Comment**

1. The SDT will be required to “revise TOP-001-3 R10 (FERC approved on 2015 Nov 19) to require TOPs have real-time monitoring of non-BES facilities.”

Since City Light is already monitoring the non-BES facilities (or distribution systems) and with the new EMS system, City Light should meet these requirements without this having a big impact on City Light.

2. Per the requirement: “The SDT will be required to revise the newly approved TOP-001-3 R19 and R20 to require TOPs and BAs to have the redundant and diversely routed data exchange capabilities.” In addition “a data exchange capability testing framework for the data exchange capabilities to test the alternate or less frequently used data exchange capabilities will be required.”

City Light is concerned that this might require us to install redundant hardware, software, and do performance testing. City Light would like clarity on the expectations.

3. This new NERC Standards Authorization Request project 2016-01 was proposed and submitted by NERC under the FERC directive (Order 817). The SDT will have to file a revised reliability standard addressing these issues for approval within 18 months of Order 817 effective date (Nov 19, 2015).

SCL would like to work with the SDT to ensure they adopt clear and concise language during the standard development process such that implementation will be straight forward, clear and concise.

**Emily Rousseau - MRO - 1,2,3,4,5,6 - MRO, Group Name** MRO-NERC Standards Review Forum (NSRF)**Comment**

Per section 47 of FERC Order 817, recommend adding Reliability Standards IRO-002-4, Requirement R4 to clarify what “redundant infrastructure” is, within this SAR.



