

Consideration of Comments

Project Name:	2015-09 Establish and Communicate System Operating Limits
Comment Period Start Date:	8/24/2018
Comment Period End Date:	10/17/2018
Associated Ballots:	2015-09 Establish and Communicate System Operating Limits CIP-014-3 IN 1 ST 2015-09 Establish and Communicate System Operating Limits FAC-003-5 IN 1 ST 2015-09 Establish and Communicate System Operating Limits FAC-011-4 AB 2 ST 2015-09 Establish and Communicate System Operating Limits FAC-013-3 IN 1 ST 2015-09 Establish and Communicate System Operating Limits FAC-014-3 AB 2 ST 2015-09 Establish and Communicate System Operating Limits FAC-015-1 AB 2 ST 2015-09 Establish and Communicate System Operating Limits Implementation Plan AB 2 OT 2015-09 Establish and Communicate System Operating Limits PRC-002-3 IN 1 ST 2015-09 Establish and Communicate System Operating Limits PRC-023-5 IN 1 ST 2015-09 Establish and Communicate System Operating Limits PRC-026-2 IN 1 ST 2015-09 Establish and Communicate System Operating Limits PRC-026-2 Non-binding Poll IN 1 NB 2015-09 Establish and Communicate System Operating Limits Proposed Definition - System Operating Limit IN 1 DEF

There were 68 sets of responses, including comments from approximately 183 different people from approximately 117 companies representing 10 of the Industry Segments as shown in the table on the following pages.

All comments submitted can be reviewed in their original format on the [project page](#).

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 of Engineering and Standards, [Howard Gugel](#) (via email) or at (404) 446-9693.

Questions

1. Industry response to the draft SOL Exceedance definition indicated numerous significant concerns. Given this response, the SDT concluded that creating a definition of SOL Exceedance which adequately reflects reliable operating principles could create an unnecessary compliance burden if action is not taken to substantially modify the existing TOP and IRO standards. Therefore, the SDT maintained system performance criteria through FAC-011-4 Requirement R6, similar to the approach within the currently effective FAC standards, rather than through an SOL Exceedance definition. Do you agree with the performance criteria in Requirement R6?

2. If you have any other comments regarding FAC-011-4 that you haven't already provided, please provide them here.

3. The SDT acknowledges that requirement R6 could alternatively be located within a TOP or IRO standard; however, the Project 2015-09 SAR does not specifically authorize the SDT to modify those standards. The SDT is seeking feedback specific to the content of the requirement not where it should reside. Proposed Requirement R6 was created to correspond with FAC-011-4 Requirement R6 in lieu of creating a definition for SOL Exceedance. Do you agree with Requirement R6?

4. If you have any other comments regarding FAC-014-3 that you haven't already provided, please provide them here.

5. The original posting of FAC-015-1 included six requirements. Industry comments to this original version indicated significant concerns. In response to these concerns, the SDT attempted to streamline and clarify the intended interactions between relevant functional entities and to consolidate the standard into fewer requirements. To achieve this the SDT:

- Consolidated Requirements R1 – R5 in the original posting into three (R1 – R3) requirements,
- Clarified the roles of the Planning Coordinator and Transmission Planner in Requirements R1 – R3, and
- Clarified that Facility Ratings are “owner-provided” in Requirement R1.

The SDT acknowledges that some of the requirements in FAC-015-1 could alternatively be located within other standards such as TPL, MOD, etc.; however, the Project 2015-09 SAR does not currently authorize the SDT to modify those standards. The SDT is seeking

feedback specific to the content of the requirement not where it should reside. Do you support the revised FAC-015-1? Please provide any other comments regarding FAC-015-1.

6. Discussions within the SDT indicated concerns with eliminating some of the components of the approved SOL definition. While the industry feedback was largely supportive of the draft SOL definition provided in the informal posting, the SDT modified the proposed definition to incorporate some of the concepts in the approved version. The SDT believes that the revised definition posted for ballot represents an improvement over the definition provided in the informal posting. Reference the SOL rationale document for more information. Do you agree with the proposed SOL definition?

7. With the retirement of FAC-010, and the elimination of Planning-based SOLs and IROLs, do you agree with the changes to CIP-014, FAC-003, FAC-013, PRC-002, PRC-023 and PRC-026?

The Industry Segments are:

- 1 — Transmission Owners
- 2 — RTOs, ISOs
- 3 — Load-serving Entities
- 4 — Transmission-dependent Utilities
- 5 — Electric Generators
- 6 — Electricity Brokers, Aggregators, and Marketers
- 7 — Large Electricity End Users
- 8 — Small Electricity End Users
- 9 — Federal, State, Provincial Regulatory or other Government Entities

- 10 — Regional Reliability Organizations, Regional Entities

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
Brandon McCormick	Brandon McCormick		FRCC	FMPPA	Tim Beyrle	City of New Smyrna Beach Utilities Commission	4	FRCC
					Jim Howard	Lakeland Electric	5	FRCC
					Javier Cisneros	Fort Pierce Utilities Authority	3	FRCC
					Randy Hahn	Ocala Utility Services	3	FRCC
					Don Cuevas	Beaches Energy Services	1	FRCC
					Jeffrey Partington	Keys Energy Services	4	FRCC
					Tom Reedy	Florida Municipal Power Pool	6	FRCC
					Steven Lancaster	Beaches Energy Services	3	FRCC
					Chris Adkins	City of Leesburg	3	FRCC

					Ginny Beigel	City of Vero Beach	3	FRCC
Exelon	Chris Scanlon	1		Exelon Utilities	Chris Scanlon	BGE, ComEd, PECO TO's	1	RF
					John Bee	BGE, ComEd, PECO LSE's	3	RF
Santee Cooper	Chris Wagner	1		Santee Cooper	Rene' Free	Santee Cooper	1,3,5,6	SERC
					Chris Wagner	Santee Cooper	1,3,5,6	SERC
					Anthony Noisette	Santee Cooper	1,3,5,6	SERC
					Weijian Cong	Santee Cooper	1,3,5,6	SERC
					Debbie Schneider	Santee Cooper	1,3,5,6	SERC
					Bridget Coffman	Santee Cooper	1,3,5,6	SERC
Duke Energy	Colby Bellville	1,3,5,6	FRCC,RF,SERC	Duke Energy	Doug Hils	Duke Energy	1	RF
					Lee Schuster	Duke Energy	3	FRCC
					Dale Goodwine	Duke Energy	5	SERC
					Greg Cecil	Duke Energy	6	RF
MRO	Dana Klem	1,2,3,4,5,6	MRO	MRO NSRF	Joseph DePoorter	Madison Gas & Electric	3,4,5,6	MRO
					Larry Heckert	Alliant Energy	4	MRO
					Amy Casucelli	Xcel Energy	1,3,5,6	MRO

Michael Brytowski	Great River Energy	1,3,5,6	MRO
Jodi Jensen	Western Area Power Administration	1,6	MRO
Kayleigh Wilkerson	Lincoln Electric System	1,3,5,6	MRO
Mahmood Safi	Omaha Public Power District	1,3,5,6	MRO
Brad Parret	Minnesota Power	1,5	MRO
Terry Harbour	MidAmerican Energy Company	1,3	MRO
Tom Breene	Wisconsin Public Service Corporation	3,5,6	MRO
Jeremy Voll	Basin Electric Power Cooperative	1	MRO
Kevin Lyons	Central Iowa Power Cooperative	1	MRO
Mike Morrow	Midcontinent ISO	2	MRO

PPL - Louisville Gas and Electric Co.	Devin Shines	1,3,5,6	RF,SERC	PPL NERC Registered Affiliates	Brenda Truhe	PPL Electric Utilities Corporation	1	RF
					Charles Freibert	PPL - Louisville Gas and Electric Co.	3	SERC
					JULIE HOSTRANDER	PPL - Louisville Gas and Electric Co.	5	SERC
					Linn Oelker	PPL - Louisville Gas and Electric Co.	6	SERC
Seattle City Light	Ginette Lacasse	1,3,4,5,6	WECC	Seattle City Light Ballot Body	Pawel Krupa	Seattle City Light	1	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	1,4	WECC
					Faz Kasraie	Seattle City Light	5	WECC
					John Clark	Seattle City Light	6	WECC

					Tuan Tran	Seattle City Light	3	WECC
					Laurie Hammack	Seattle City Light	3	WECC
ACES Power Marketing	Jodirah Green	6	NA - Not Applicable	ACES Standard Collaborations	Shari Heino	Brazos Electric Power Cooperative, Inc.	5	Texas RE
					John Shaver	Arizona Electric Power Cooperative, Inc.	1	WECC
					Joseph Smith	Prairie Power	3	SERC
					Susan Sosbe	Wabash Valley Power Association	3	RF
					Bob Solomon	Hoosier Energy Rural Electric Cooperative, Inc.	1	SERC
					Tara Lightner	Sunflower Electric Power Corporation	1	MRO
Lincoln Electric System	Kayleigh Wilkerson	5		Lincoln Electric System	Kayleigh Wilkerson	Lincoln Electric System	5	MRO

					Eric Ruskamp	Lincoln Electric System	6	MRO
					Jason Fortik	Lincoln Electric System	3	MRO
					Danny Pudenz	Lincoln Electric System	1	MRO
Manitoba Hydro	Mike Smith	1		Manitoba Hydro	Yuguang Xiao	Manitoba Hydro	5	MRO
					Karim Abdel-Hadi	Manitoba Hydro	3	MRO
					Blair Mukanik	Manitoba Hydro	6	MRO
					Mike Smith	Manitoba Hydro	1	MRO
Southern Company - Southern Company Services, Inc.	Pamela Hunter	1,3,5,6	SERC	Southern Company	Katherine Prewitt	Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC

					William D. Shultz	Southern Company Generation	5	SERC
					Jennifer G. Sykes	Southern Company Generation and Energy Marketing	6	SERC
Northeast Power Coordinating Council	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	RSC no Dominion, Con Ed and NBPower	Guy V. Zito	Northeast Power Coordinating Council	10	NPCC
					Randy MacDonald	New Brunswick Power	2	NPCC
					Wayne Sipperly	New York Power Authority	4	NPCC
					Glen Smith	Entergy Services	4	NPCC
					Brian Robinson	Utility Services	5	NPCC
					Alan Adamson	New York State Reliability Council	7	NPCC

Edward Bedder	Orange & Rockland Utilities	1	NPCC
David Burke	Orange & Rockland Utilities	3	NPCC
Michele Tondalo	UI	1	NPCC
David Ramkalawan	Ontario Power Generation Inc.	5	NPCC
Helen Lainis	IESO	2	NPCC
Michael Schiavone	National Grid	1	NPCC
Michael Jones	National Grid	3	NPCC
Sean Cavote	PSEG	4	NPCC
Kathleen Goodman	ISO-NE	2	NPCC
Quintin Lee	Eversource Energy	1	NPCC
Salvatore Spagnolo	New York Power Authority	1	NPCC
Shivaz Chopra	New York Power Authority	6	NPCC

					David Kiguel	Independent	NA - Not Applicable	NPCC
					Silvia Mitchell	NextEra Energy - Florida Power and Light Co.	6	NPCC
					Paul Malozewski	Hydro One Networks, Inc.	3	NPCC
					Gregory Campoli	New York Independent System Operator	2	NPCC
					Caroline Dupuis	Hydro Quebec	1	NPCC
					Chantal Mazza	Hydro Quebec	2	NPCC
Dominion - Dominion Resources, Inc.	Sean Bodkin	6		Dominion	Connie Lowe	Dominion - Dominion Resources, Inc.	3	NA - Not Applicable
					Lou Oberski	Dominion - Dominion Resources, Inc.	5	NA - Not Applicable
					Larry Nash	Dominion - Dominion Virginia Power	1	NA - Not Applicable

Southwest Power Pool, Inc. (RTO)	Shannon Mickens	2	MRO,SPP RE	SPP Standards Review Group	Shannon Mickens	Southwest Power Pool Inc.	2	MRO
					Louis Guidry	Cleco	1,3,5,6	SERC
					Allan George	Sunflower Elect	1	MRO
					Jim Nail	City of Independence, Power and Light Department	5	MRO
					Robert Gray	Board of Public Utilities (BPU)	3	MRO
OGE Energy - Oklahoma Gas and Electric Co.	Sing Tay	6	SPP RE	OKGE	Sing Tay	OGE Energy - Oklahoma	6	MRO
					Terri Pyle	OGE Energy - Oklahoma Gas and Electric Co.	1	MRO
					Donald Hargrove	OGE Energy - Oklahoma Gas and Electric Co.	3	MRO
					John Rhea	OGE Energy - Oklahoma Gas	5	MRO

Associated Electric Cooperative, Inc.	Todd Bennett	3		AECI	Michael Bax	and Electric Co. Central Electric Power Cooperative (Missouri)	1	SERC
					Adam Weber	Central Electric Power Cooperative (Missouri)	3	SERC
					Stephen Pogue	M and A Electric Power Cooperative	3	SERC
					William Price	M and A Electric Power Cooperative	1	SERC
					Jeff Neas	Sho-Me Power Electric Cooperative	3	SERC
					Peter Dawson	Sho-Me Power Electric Cooperative	1	SERC
					Mark Ramsey	N.W. Electric Power Cooperative, Inc.	1	NPCC

				John Stickley	NW Electric Power Cooperative, Inc.	3	SERC
				Ted Hilmes	KAMO Electric Cooperative	3	SERC
				Walter Kenyon	KAMO Electric Cooperative	1	SERC
				Kevin White	Northeast Missouri Electric Power Cooperative	1	SERC
				Skyler Wiegmann	Northeast Missouri Electric Power Cooperative	3	SERC
				Ryan Ziegler	Associated Electric Cooperative, Inc.	1	SERC
				Brian Ackermann	Associated Electric Cooperative, Inc.	6	SERC
				Brad Haralson	Associated Electric Cooperative, Inc.	5	SERC

1. Industry response to the draft SOL Exceedance definition indicated numerous significant concerns. Given this response, the SDT concluded that creating a definition of SOL Exceedance which adequately reflects reliable operating principles could create an unnecessary compliance burden if action is not taken to substantially modify the existing TOP and IRO standards. Therefore, the SDT maintained system performance criteria through FAC-011-4 Requirement R6, similar to the approach within the currently effective FAC standards, rather than through an SOL Exceedance definition. Do you agree with the performance criteria in Requirement R6?

Laura Nelson - IDACORP - Idaho Power Company - 1

Answer No

Document Name

Comment

Requirement R6.3 does not address SOL violations, but only checks against instability, cascading, or uncontrolled separation, even though this criteria is being used to evaluate performance on additional single or multiple contingency events (R5.2) for use in OPA and Real-time assessments. This suggests that SOL violations would be allowed for these contingencies.

Likes 0

Dislikes 0

Response

The SDT appreciates your comments. Requirement R6.2.3 is applicable to stability SOL exceedances, not R6.3. Requirement R6.3 uses portions of the definition for IROL such that those contingencies which should be monitored / studied to prevent IROLs have a set criteria against which they should be measured.

Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6

Answer No

Document Name

Comment

The language presented in the R6 is unclear and can lead to different interpretations. The language in R6 needs further clarification.

The drafting team needs to clarify that both actual pre-Contingency state and anticipated pre-Contingency state referred in R6.1 are referring to a TPL equivalent of P0 (system normal) state of the transmission system.

The drafting team should consider rephrasing the language in R6.2.1. Drafting team proposing not to allow usage of Emergency Ratings for contingency events irrespective of presence of operating plan is in complete variation of the planning standard requirements that allows usage of emergency ratings for contingencies described in R5.1.1.

The real time pre-Contingency state could be much different than the anticipated pre-Contingency state and the operating plan proposed for the anticipated pre-Contingency state may not be adequate during the real time pre-Contingency state. Under these conditions, not allowing the operators to use the Emergency ratings is very much disadvantageous and opposite to the intent of PRC-023 where the operator should be allowed to have flexibility to operate the system under Contingency conditions.

PacifiCorp recommends rephrasing 6.2.1 requirement as below

“Flow through Facilities are within applicable Emergency Ratings. Flow through a Facility must not be above the Facility’s highest available Rating, following an N-1 contingency.”

Likes	0
Dislikes	0

Dislikes	0
----------	---

Response

The SDT appreciates your comments. The drafting team did not include references to the P0 state in standard TPL-001-4 due to the fact that in operations, the system is commonly not in an “all facilities in-service state” and, hence, not necessarily in the defined P0 state defined in Table 1 of TPL-001-4. Instead, the SDT sought on language general language that would work for pre and post-contingent states. The SDT has revised the language to refer to the pre-contingent state as one with “no Contingencies” and the post-contingent state by evaluating performance for single Contingencies defined in FAC-011-4.

The SDT made some language revisions in requirement R6.2.1, resulting in the following remaining language:

“Steady state post-Contingency flow through Facilities within applicable Emergency Ratings. Steady state post-Contingency flow through a Facility must not be above the Facility’s highest Emergency Rating.”

The SDT left the first sentence so that time constraints in any thermal limits had to be respected (for example, a 4 hour rating could not be used for more than 4 hours), and retained the sentence you noted with regard to the highest rating use. We believe these edits largely capture your concern.

Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

No

Document Name

Comment

The MRO NSRF supports the efforts of the SDT to clarify for the industry what is considered SOL exceedance in the context of the IRO and TOP Standards. We appreciate the SDT listening to the concerns raised by industry regarding the previously proposed SOL Exceedance definition and we agree with the SDT's approach to abandon that potential change. We also agree with the SDT's concept that the Reliability Coordinator's SOL Methodology must address the system performance criteria to ensure consistent identification of SOLs. However, what is still not broadly understood is if each Facility must have an associated thermal-based SOL dependent on current system topology. In Requirement R3 it addresses establishment of a voltage-based SOL at each bus, but there isn't a similar requirement for thermal ratings. Is it the expectation of the SDT that each Facility has a thermal-based SOL or can a subset (Flowgates?) be used to manage power flow on the system? This needs to be clearly stated in a requirement so that everyone is planning and operating the BES from the same understanding.

Additionally, it's not clear if exceeding the Normal Rating or normal System Voltage Limit is considered a SOL exceedance if you have a higher Emergency Rating or emergency System Voltage Limit for a specified time duration. It could be interpreted to say there isn't SOL exceedance until you're over the highest value of the Emergency Rating. This understanding translates to compliance expectations in the IRO and TOP Standards for when you must implement your Operating Plan. If we're relying on the SOL whitepaper to clarify, then some entities may choose not to follow it saying it's not mandatory and we'll continue to have disagreement and confusion in the industry.

In order to support this project, the MRO NSRF needs to understand all the compliance expectations for SOL exceedances, including those associated with the IRO/TOP standards. Is every indication where the FAC-011 R6 performance criteria is exceeded considered a violation of FAC-014 R6 and/or an inadequate real time Operating Plan? Are current operating protocols, which are agreed upon by the Transmission Operator and Reliability Coordinator and allow for temporary exceedances while control actions (such as LMP binding) are being implemented, now going to be prohibited and considered violations? As the proposed performance criteria (for post-contingent thermal and voltage exceedances) does not include any time threshold (in analogy with T_v for IROs) does that imply the Transmission Operator and Reliability Coordinator would NOT be given any timeframe (such as 30 minutes) to correct an exceedance (particularly post-contingent thermal or voltage exceedances), before it becomes a reportable event and a potential compliance issue? Will the performance criteria be identical independently of the system state (i.e. if the system is in N-1 as opposed to N-4, or even more severe, topology conditions)? Is the Transmission Operator expected to perform a timing analysis to determine if ramp rates, start-up times and location and amount of load shedding are adequate every time it operates above the Normal Rating but below Emergency Rating to verify its Operating Plan will eliminate exceedance within the timeframe of the Emergency Rating? Would the proposed performance criteria not allow for any regional differences even in cases where a Reliability Coordinator is not registered as a Transmission Operator, but has critically important mitigating control actions under its responsibilities? We do not want to unintentionally approve a standard that creates overly burdensome compliance demonstration expectations for the industry, while the SER project is actively seeking ways to streamline and reduce these burdens. Since the SDT cannot answer all these questions, then we request NERC staff to draft a CMEP Practice Guide to inform the industry of the compliance expectations for SOLs as applied in the FAC, IRO and TOP standards.

Will entities be forced to create separation between the highest Emergency, Emergency, and Normal ratings if they are currently the same? An example is a conductor limited transmission line with a 10-minute time constant where all three ratings are identical. Does an entity have to de-rate the line by increments of sag temperature or percentage to create time between ratings or be in violation of the FAC-011-4 timing requirements. Short time frames of under 30 minutes could also lead to a violation of FAC-011-4 R6.5. Short time frames under 30 minutes aren't sufficient time for a system operator to consider "all" other available system adjustments before implementing load shedding. [\[A1\]](#)

To further explain, we believe the proposed performance criteria in FAC-011-4 Requirement R6 seems to capture the essence of SOL exceedance. However, we are concerned the proposed language creates a significant reliability/compliance burden for Transmission Operators and Reliability Coordinators as follows:

1. R6.2 - The language mandates evaluation of all contingencies listed in R5.1.1 of FAC-011-4 as part of the Real Time Assessment (RTA) and the Operational Planning Analysis (OPA) without exception. When coupled with R6.2.3, this language pulls in dynamic analysis of all of these contingencies for both the RTA and OPA. This is an infeasible expectation for the Transmission Operator and Reliability Coordinator to include in their RTAs and OPAs, since R5.1.1 contains no caveats to limit the list of applicable single contingencies.
2. R6.2.1 - The flows on a transmission element may exceed the applied Emergency Rating during the dynamic time period, but there is likely no risk to the system. Although the first phrase "applicable Emergency Ratings" might seem to provide the flexibility, this means an entity must know the "*applicable Emergency Rating*" for a particular dynamic loading and time period for each piece of equipment and each piece of equipment would need to be monitored in a dynamics analysis. It may be that the SDT does not intend to pull in dynamics in 6.2.2 but it is a logical reading of the standard.
3. R6.2.3 - As noted above, although this is the desired result, it is infeasible to perform dynamic analyses of all R5.1.1 contingencies as part of either an RTA or an OPA. In fact, it is an extremely expensive proposition to perform any real time dynamic simulations due to the complexities of maintaining an accurate dynamic model that incorporates traditional transmission equipment let alone the myriad of user written or proprietary dynamic models in use today for FACTS devices and variable generation.
4. R6.3 and R6.4 contain the same problems as noted above. It is infeasible to run dynamic simulations as part of the RTA and it is very complex to do so for the OPA. At least in this case, R5.2 and R5.3 allow the Reliability Coordinator to provide a very limited list of contingencies. Still, even with a limited list, the language of R6 and its sub-parts does not limit the scope of what a Transmission Operator would be required to run under FAC-014-3 (see R2 of that standard). Rather, FAC-011-4 R6 language implies that a Transmission Operator would be required to evaluate all of the contingencies identified by a Reliability Coordinator, not just those that apply to the Transmission Operator's footprint. Note that FAC-014-3 R2 limits the Transmission Operator to identifying SOLs to its footprint, but it does not limit the contingencies a Transmission Operator would need to consider.
5. R6.5 - The standard incorrectly eliminates planned load shedding from consideration when a RAS or UVLS programs may have specifically established the need to take such action to maintain system stability for the particular contingencies under consideration.

We offer the following proposed improvements to address the comments above:

- R6.1.1, R6.1.2, R6.2.1 and R6.2.2 could be improved by clarifying that these sub-requirements are only describing steady-state conditions. Each requirement could have the following leading statement added: "*Under steady-state analysis:*".
- In addition, R6.2.1 and R6.2.2 would also benefit from adding the word "*Anticipated*" ahead of the terms "*Flow*" and "*Voltages*" in these requirements, respectively, to make it clear that these are potential system flows and voltages, not real time flows and voltages, being evaluated.

Regarding the scope of dynamic simulations, the best location to make modifications is likely the R5 and R5.1 language, not R6. Proposed modifications are as follows:

- R5 - Strike "*and performing the Operational Planning Analysis (OPAs) and Real-time Assessments (RTAs) for the area under study*" since this language is redundant to the R6 performance criteria language that will require these contingencies to be evaluated as part of the RTA and OPA. With this removed, R5 is tailored to only describe what contingency events need to be examined for the identification of SOLs.
- R5.1 - Remove the language regarding "*determining stability limits and performing OPAs and RTAs*" and add "*for use in determining steady state SOLs*", since the SOL methodology should require examination of all of the single contingencies listed under R5.1.1 using steady-state analysis. The contingencies to examine for dynamics will be a very small list (hopefully) and can be adequately addressed by modifications to R5.3.
- R5.2 - Remove "*for use in performing Operational Planning Analysis and Real-time Assessments*" since, again, this is adequately covered by R6, and add in language as follows "*for use in determining steady state SOLs*".
- R5.3 - Strike the word "*additional*" from the existing R5.3 language and add the following to the end of the requirement: "*where the identified single Contingency events involving the loss of a generator, transmission circuit, transformer, shunt device, or single pole block in a monopolar or bipolar high voltage direct current system must simulate either: (a) Normal Clearing of a single phase to ground or three phase Fault (whichever is more severe) or (b) tripping without a Fault condition*".
- Regarding the Transmission Operator performing a certain set of contingencies, the R6.2, R6.3 and R6.4 language could all be modified to state: "*The evaluation of applicable potential single Contingencies ...*" (for R6.2) and "*The evaluation of the applicable potential Contingencies ...*" (for R6.3 and R6.4).

R6.5 could be improved by clarifying that RAS and UVLS actions should be implemented in the stability analysis, as applicable. The SDT should also recognize that underfrequency load shedding (UFLS) may be a necessary part of system stabilization once a RAS operates if that RAS is creating a planned islanded system. As such, UFLS may also be a warranted load shedding component when performing stability analysis. R6.5 language could be modified by adding "*planned load shedding, other than Remedial Action Scheme (RAS) or UVLS action, is acceptable ...*" and then adding a new sentence that reads, "*The use of UFLS programs should only be simulated when incorporated as part of the system design to maintain stability (e.g., RAS).*"

Likes 0

Dislikes 0

Response

The SDT appreciates your comments. Those comments, and those of other Midwestern entities such MISO and MidAmerican Energy Co., have provided focus to the SDT's efforts since the second posting.

Those efforts have resulted in revisions to FAC-011-4, FAC-014-3, TOP-001 and IRO-008 which we believe address the concerns you raise above, and other commenters have noted. These revisions have been made to accomplish the following:

- Have SOL exceedances determined in the appropriate TOP and IRO standards rather than the FAC standards.
- The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards. In addition, numerous wording changes have been implemented within requirement R6 in response to comments such as those you have above.
- FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include "a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur". This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.
- The measures for a few TOP and IRO standards were revised to better describe a more complete set of potential evidence that may be used to show compliance. In addition, the standard rationales have been revised to explain how this evidence may be used to show compliance with the standards.

We believe these changes, which were developed with the support of and feedback with staff from your company and others from within MISO, should address these commonly held industry concerns.

To summarize, the SDT's standard revisions have sought to provide a common minimum framework for industry to determine SOL exceedances, where appropriate in the TOP and IRO standards, and have added process to help improve the required communications on SOL exceedances. The SDT has done this while expanding the list of evidence to minimize any resulting compliance documentation burden. We look forward to your review of our efforts with our new posting and appreciate any comments you may offer.

In addition to these general comments, let us address some of the specific questions you pose.

The SDT worded requirement R2 such that the RC provides a method for the TOP to determine which facility-owner ratings to use. If the facility owner provides ratings for all of their assets, we would expect they are modeled. To expand upon the example you offered, if the RC's SOL methodology states that the RC needs a 10 minute, 1 hour and 24 hour thermal rating. For this example, let's assume the facility-owner only offers a 24 hour, or normal rating. The RC's methodology should describe how to use rating sets which do not perfectly match what the RC seeks. In this instance, it is likely the normal rating would be used for the 24 hour, 1 hour and 10 minute ratings. The RC would not require that the facility owner provides other ratings, but the facility owner would clearly see what ratings the RC seeks to use with its TOPs. This would not preclude the use of flowgates, but we believe does set the expectation that ratings provided would be used to operate. Likewise, this requirement does not require facility owners to provide amongst the ratings they offer.

Requirement R6.5 from the second posting, which is now requirement R6.4 in the latest version of FAC-011-4, was not intended to address what mitigation actions are acceptable for inclusion in an Operating Plan, including RAS or other post-contingency mitigation actions (including undervoltage relays that are not specifically part of an overall Under Voltage Load Shed (UVLS) scheme). The SDT did capture that "planned manual load shedding", if included in an Operating Plan, should be a measure of last resort. With respect to RAS, requirement R4.6 requires that the RC document in their SOL methodology the "allowed uses of Remedial Action Schemes and other automatic post-Contingency mitigation actions in establishing stability limits used in operations". However, R4.7 requires "that the use of underfrequency load shedding (UFLS) programs and Undervoltage Load Shedding (UVLS) Programs are not allowed in the establishment of stability limits". The use of UVLS and UFLS as a safety net and not for performance criteria or in the establishment of a stability limit is consistent with FERC commission comments in FERC Order 818.

Kayleigh Wilkerson - Lincoln Electric System - 5, Group Name Lincoln Electric System

Answer	No
Document Name	
Comment	
LES supports the comments provided by the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Please see response to MRO NSRF.	
Don Schmit - Nebraska Public Power District - 5	
Answer	No
Document Name	
Comment	
NPPD supports comments submitted by the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Please see response to MRO NSRF.	
Patti Metro - National Rural Electric Cooperative Association - 3,4	
Answer	No
Document Name	
Comment	

NRECA agrees that it is not necessary to create a definition of SOL Exceedance, but still believes the new FAC-011-04 R6 requirement creates undue compliance burden by prescribing an excessive number of sub-requirements. The structure of R6 is confusing. Many of the sub-requirements that are not standalone with references to other requirements in the proposed standard.

Likes 0

Dislikes 0

Response

The SDT appreciates your comment. The SDT has taken comments from numerous entities and attempted to improve the language and decrease some of the complexity. However, the SDT does not understand how the number of sub requirements in and of itself creates undue compliance burden. The sub requirements in R6 were derived from the existing FAC-011-3 sub requirements in R2, which are performance requirements which help determine SOL exceedances. The specificity included in FAC-011-4 R6 was to remove ambiguity that exists in the current standard. The references to other requirements in R6 only exist to note which sets of contingencies (defined by a specific requirement) are applicable to which sets of performance requirements. Managing SOLs is a job each RC / TOP must do, and the SDT agrees R6 provides clarity in determining SOL exceedances.

Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECl

Answer

No

Document Name

Comment

AECl supports comments provided by NRECA.

NRECA agrees that it is not necessary to create a definition of SOL Exceedance, but still believes the new FAC-011-04 R6 requirement creates undue compliance burden by prescribing an excessive number of sub-requirements. The structure of R6 is confusing. Many of the sub-requirements that are not standalone with references to other requirements in the proposed standard.

Likes 0

Dislikes	0
Response	
<p>The SDT appreciates your comment. The SDT has taken comments from numerous entities and attempted to improve the language and decrease some of the complexity. However, the SDT does not understand how the number of sub requirements in and of itself creates undue compliance burden. The sub requirements in R6 were derived from the existing FAC-011-3 sub requirements in R2, which are performance requirements which help determine SOL exceedances. The specificity included in FAC-011-4 R6 was to remove ambiguity that exists in the current standard. The references to other requirements in R6 only exist to note which sets of contingencies (defined by a specific requirement) are applicable to which sets of performance requirements. Managing SOLs is a job each RC / TOP must do, and the SDT agrees R6 provides clarity in determining SOL exceedances.</p>	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	
<p>The use of the undefined term 'instability' could lead to inconsistent results and result in additional compliance burdens that add little to no reliability benefit. As used in FAC-011 R6, instability is not limited to the BES or wide area but instead, as currently worded, applies to ANY instability that has ANY impact to any element or facility. R6.1.3 and 6.2.3 should be limited to the interconnection or at the very least the wide-area to prevent misunderstanding.</p>	
Likes	0
Dislikes	0
Response	
<p>The SDT appreciates your comments offered. The quoted term (instability) and language was taken from the definition of IROL in the NERC glossary of terms. The SDT will consider including in R6 impact on the BES to limit the potential scope of instability, per your comment.</p>	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1	
Answer	No

Document Name

Comment

MidAmerican Energy Company (MEC) understands and supports the SDT’s efforts to come up with the broad industry consensus with regard to definition of SOL and associated definition of SOL Exceedance.

MidAmerican supports the SDT’s proposal to create a definition of SOL exceedance, **as long as that definition would NOT cause unintended consequences in terms of setting unrealistic expectations or imposing additional and undesirable administrative compliance burden on numerous entities.** In this effort, the SDT should carefully assess repercussions on reliability and efficient market operations

We certainly appreciate the SDT’s rational approach of not proceeding with the proposed definition of SOL exceedance having in mind significant number of negative comments which were received in October, 2017, primarily from MISO and SPP Regions.

Unfortunately, instead of patient continuation of efforts to adjust and improve proposed definition of SOL exceedance, the NERC Standard Drafting Team decided to take, in our view, **inappropriate approach of incorporating that controversial and arguable (although somewhat modified) definition of SOL Exceedance as a performance criteria in Requirement 6 of FAC-011-4 Standard. We consider this pathway as potentially worse and more risky in comparison with coming up with definition of SOL Exceedance. The reason for such a characterization is that by substituting definition of SOL Exceedance via embedding it as a performance criteria into FAC-011-4, the SDT would expose a number of TOPs and RCs to risk of directly violating FAC-011-4 (Requirement 6) and associated penalties, if (non-agreed upon in terms of definition) exceedances of system operating limits occur either in RTA or OPA.**

Furthermore, we believe that addressing a fundamental concept of SOL Exceedance definition needs to be done within the framework of IRO and TOP standards, where it inherently and logically belongs. We do not agree with an approach of moving that cornerstone of reliable operations from IRO/TOP set of standards to the FAC set of standards. In other words, we believe that the present context of defining what constitutes SOL exceedance **and reacting to it by initiating Operating Plan (per IRO-008-2-R2 and TOP-001-4-R14) is far better** than directly

exposing large number of entities to the risk of non-compliance without appropriate considerations related to physical constraints that need to be overcome during implementation of Operating Plans, in a timely manner.

Fundamental principles and complexities of real power systems do not allow for ignoring the time dimension that always exist when implementing corrective control actions when temporary exceedances of SOL occur, especially in RTA. That was, unfortunately, overlooked in proposed versions of FAC-011-4 and FAC-014-3.

The role of SOL exceedance definition (or performance criteria within FAC-0114-R6), in our opinion, should be to clearly and unambiguously formulate critical operational borderlines of reliable operations, while **respecting existing limitations of existing transmission infrastructure and human resources that operate that infrastructure.**

Our quite specific reasons for NOT agreeing with the proposed Requirement 6 of FAC-011-4 are:

1. **Requirements 6.1.1; 6.1.2 and 6.2.1** use the phrase *“when System adjustments to return the flow/voltage within its Normal Rating/Voltage Limits could be executed and completed within the specified time duration of those Emergency Ratings/Voltage Limits”*.

We would like to show our appreciation to the SDT for their reasonable approach of listening to the industry’s comments and gradually improving the definition of SOL exceedance. In this particular case we are pleased that the SDT now considers exceedance of Emergency (rather than Normal) limits as a reportable event.

However, there is a problem with using the phrase “*could be executed and completed within the specified time duration of those Emergency Ratings/Voltage Limits*” as clearly pointed out by Mr. Terry Volkmann. We completely agree with his comment: “*This implies that in order to use the range between normal and emergency rating for an anticipated contingency, a timing analysis needs to be performed before the contingency occurs to determine if ramp rates, start-up times and location and amount of load shedding are adequate.... TOP (in MISO and SPP reliability footprints) cannot perform such analyses, because the RC/market operator has all the data and tools to do the analysis.... **This analysis is best served as an internal control not a compliance obligation.***” MEC agrees with Mr. Volkmann that above mentioned quoted phrase shall be eliminated from the draft of the standard.

The implementation risk and compliance risk associated with this language is substantial and very concerning. Based on the language, TOP is expected to perform and document a timing analysis to determine if the adjustments could be executed within the specified time duration of Emergency Ratings each and every time when TOP performs RTA and find its facilities operating between Normal and Emergency Rating (either in real-time or on a contingency basis). It should be noted that such a timing analysis in real-time is difficult and requires significant time and resources. If such timing analysis cannot be performed (or is not performed due to lack of time or other reasons, or simply not logged/recorded) that may trigger non-compliance, concerning FAC-011 R6 in conjunction with FAC-014 R6

The second problem is that it is necessary to differentiate between flow exceedances and voltage exceedances in terms of risk to the equipment and the time tolerance.

We recommend the following definition:

- ***Actual steady state flow on a BES Facility is greater than the Facility’s highest Emergency Rating for any time period.***
- ***Actual steady state flow on a BES Facility is above the Normal Rating but below the next Emergency Rating for longer than the time frame of the next Emergency Rating.***

- *Actual steady state voltage on a BES Facility is greater than the emergency high voltage limit for time frame identified by the TOP.*
- *Actual steady state voltage on a BES Facility is less than the defined emergency low voltage limit for time frame identified by the TOP.*

Alternatively, our comments can be formulated in the following red-line (highlighted in yellow changes):

1.
 - i.
 - a. *Steady state Flow through Facilities are within Normal Ratings; however, Emergency Ratings may be used only when System adjustments to return the flow within its Normal Rating can be executed and completed within the specified time duration of those Emergency Ratings.*
 - b. *Steady state Voltages are within normal System Voltage Limits; however, emergency System Voltage Limits may be used only when System adjustments to return the voltage within its normal System Voltage Limits can be executed and completed within the specified time duration of those emergency System Voltage Limits.*
1. **Requirements 6.1.3 and 6.2.3** refer to preventing instability, cascading or uncontrolled separation.
- We find it inappropriate that **the proposed definition does not recognize time-frame associated with exceedances of established stability limits**. If not recognized, this can lead to hundreds of meaningless (nuisance) exceedances (for sake of an example, such as those that last less than 1 minute and have magnitude of less than 1%). More importantly, it should be noticed that even present definition of the IROL violation has associated Tv time threshold (or 30 minutes) before it becomes a compliance issue. Proposed

formulation of 6.1.3 and 6.2.3 should include the time threshold (in analogy with Tv) so that RCs/TOPs would be given specified time frame to correct exceedance, before it becomes compliance issue.

We recommend the following definition:

- ***Any established stability limit (non-IROL) or limit that may cause cascading outages or uncontrolled separation shall not be exceeded for longer than the 30 minutes, or defined by Operating Plan.***

Alternatively, our comments can be formulated in the following red-line (highlighted in yellow changes):

1.
 - i.
 - a. *Any established stability limit (non-IROL) is mitigated within the time-frame specified in (and in accordance with) the RC's SOL methodology and Operating Plan, or with RC's approved post-contingency action plan.*
 - b. *System-wide Instability, Cascading or uncontrolled separation do not occur.*
2.
 - i.
 - a. *Any established stability limit (non-IROL) is mitigated within the time-frame specified in (and in accordance with) the RC's SOL methodology and Operating Plan, or with RC's approved post-contingency action plan.*
 - b. *System-wide Instability, Cascading or uncontrolled separation do not occur.*

1. **Requirement 6.2.1** is of particular importance and probably the single, most frequent concern in present industry's practice. MidAmerican Energy Company appreciates SDT's reasonable approach of listening to the industry's comments and gradually improving the definition of SOL exceedance/performance criteria. However, we would like to draw the SDT's attention to the following issues with their present formulation of the Requirement 6.2.1, which states that:

*“provided that System adjustments could be executed and completed within the specified time duration of those Emergency Ratings. **Flow through a Facility must not be above the Facility's highest Emergency Rating.**”*

We would like to point out several issues with regard to this formulation:

- First, **the proposed definition does not recognize time-frame associated with exceedances of the Facility's highest Emergency Rating.** If not recognized, this can lead to hundreds of meaningless (nuisance) exceedances (for sake of an example, such as those that last less than 1 minute and have magnitude of less than 1%). Others exceedances may last several minutes (5-30 minutes, just for sake of example) due to time constraints associated with operators' response to these exceedances and physical reality/timing of corrective control actions that need to be implemented. More importantly, it should be noticed that even present definition of the IROL violation has associated Tv time threshold (or 30 minutes) before it becomes a compliance issue. Proposed formulation of 6.2.1 should include the time threshold (in analogy with Tv) so that RCs/TOPs would be given specified time frame to correct exceedance, before it becomes compliance issue.
- Second, regarding the phrase *“Flow through a Facility must not be above the Facility's highest Emergency Rating”*, the SDT's formulation appears to be based on the Project 2014-03 Whitepaper. We need to draw attention of the SDT that the original version of the NERC White Paper (from May 2014) was stating that *“Post-contingency flow in this range is not acceptable **unless Operating Plan address reliability impact so that it has localized impact**”*. Subsequent version of the NERC White Paper (revision of January

2015) introduced statement that “Post-contingency flow in this range is not acceptable”. **This revision, with a major impact, was never presented to the industry, never approved by the Industry and, in our opinion, was step in the wrong direction. The most recently published revision adds clarity and improved formulations, but still departs from the original concept and ignores time dimension that is necessary to implement corrective control actions, especially for inevitable short term exceedances in RTA, on a contingency basis.**

- Third, the SDT’s proposed definition of the post-Contingency flow SOL exceedance **fails to recognize the important difference between actual, pre-contingency SOL exceedance and calculated, post-contingency RISK of SOL exceedance.** This attempt to include both of them under the single, generic term “performance criteria/SOL exceedance” may easily cause an incorrect expectation that TOP/RC’s control actions response to these two types of exceedances should be similar, in terms of timing, logging and recording.
- Fourth, **it is perfectly clear and understandable that both of these types of exceedances require and should trigger implementation of a control action from Operating Plan, but they should be treated *differently in terms of urgency and severity of mitigating control actions*, as they have different repercussions on system reliability.**
- Fifth, there is a problem with using the phrase “*could be executed and completed within the specified time duration of those Emergency Ratings*” as clearly pointed out by Mr. Terry Volkmann. We completely agree with his comment: “*This implies that in order to use the range between normal and emergency rating for an anticipated contingency, a timing analysis needs to be performed before the contingency occurs to determine if ramp rates, start-up times and location and amount of load shedding are adequate.... TOP (in MISO and SPP reliability footprints) cannot perform such analyses, because the RC/market operator has all the data and tools to do the analysis.... **This analysis is best served as an internal control not a compliance obligation.***” MEC agrees with Mr. Volkmann that this phrase shall be eliminated from the draft of the standard.

The implementation risk and compliance risk associated with this language is substantial and very concerning. Based on the language, TOP is expected to perform and document a timing analysis to determine if the adjustments could be executed within the specified

time duration of Emergency Ratings each and every time when TOP performs RTA and find its facilities operating between Normal and Emergency Rating (either in real-time or on a contingency basis)? It should be noted that such a timing analysis in real-time is difficult and requires significant time and resources. If such timing analysis cannot be performed (or is not performed due to lack of time or other reasons, or simply not logged/recorded) that may trigger non-compliance, concerning FAC-011 R6 in conjunction with FAC-014 R6.

• Sixth, regarding the **language in FAC-011-4 (R6.2.1)** *“Flow through a Facility must not be above the Facility’s highest Emergency Rating”*, let’s consider the following scenario. TOP operates in REAL-TIME with one scheduled outage (N-1 topology). Then a fault occurs (single event such as bus fault or similar) and takes out of service two (or more) facilities, thus bringing the system in real-time into N-3 topology condition. Now, RTCA starts showing overloading for next single contingency (N-4).

The concern is if the language in the draft of the standard assumes that **the performance criteria are identical, independently of the system state** (i.e. if the system is in N-1 as opposed to N-3, or even more severe, topology conditions). We certainly understand that in OPA such a scheduled outage would not be approved if it causes SOL exceedances. However, what will be applicable performance criteria if that event happens in real-time due to single event? Of course TOP will implement its Operating Plan to correct the exceedance, but due to significantly deteriorated topology (for which the system was never designed) it may take longer time period to eliminate exceedance on a contingency basis. Or, analysis may show that only firm load shedding may eliminate the exceedance.

The issue is that if the same performance criteria are applicable independently of topology conditions, in order to avoid performance criteria violation (on a contingency basis) the only viable option might be pre-contingent firm load shedding to correct contingency based (not real-time) exceedance.

We recommend the following definition for 6.2.1:

- ***Projected post-Contingent loading on a BES Facility is greater than the highest Emergency Rating for longer than 30 minutes with NO agreed upon Post Contingency Action Plan that would mitigate the condition if the Contingency were to occur.***

Alternatively, our comments can be formulated in the following red-line (highlighted in yellow changes):

1.
 - i. *The evaluation of potential single Contingencies listed in Part 5.1.1 for system intact and N-1 operating conditions, against the actual pre-Contingency state (Real-time monitoring and Real-time Assessments) and anticipated pre-Contingency state (Operational Planning Analysis) demonstrates the following:*
 - a. *Flow through Facilities are within applicable Emergency Ratings, provided that System adjustments can be executed and completed within the specified time duration of those Emergency Ratings. Post-Contingency flow in this range that is not mitigated within the time-frame specified in (and in accordance with) the RC's SOL methodology, or without RC's approved post-contingency action plan, constitutes reportable exceedance to RC. The Operating Plan developed and mutually agreed to by TOP and RC is required to address potential impacts and post-contingent mitigating strategies, including but not limited to load shedding, while normal congestion relief control actions are being implemented, to ensure potential impact is localized. Flow through a Facility must not be above the Facility's highest Emergency Rating.*
 - b. *Voltages are within emergency System Voltage Limits. Post-Contingency voltage outside of the emergency System Voltage Limits that is not mitigated within the time-frame specified in (and in accordance with) the RC's SOL methodology, or without RC's approved post-contingency action plan, constitutes reportable exceedance to RC. The Operating Plan developed and mutually agreed to by TOP and RC is required to address potential impacts and post-contingent mitigating strategies, including but not limited to load shedding, while normal control actions for eliminating System voltage exceedance are being implemented, to ensure potential impact is localized..*

Rationale for using Post-contingency action plan concept

- The main difference between our proposed definition and the SDT's proposed definition is the **concept of post-contingent action plan**. *The Post-contingency action plan is the RC's/TOP's agreed upon control action to be used **while the normal congestion management processes are attempting to return the projected post contingent flow within longer-term rating***. It is very important to note that the Post-contingency action plans are **NOT** a vehicle to justify continual operation where the projected post contingent flow is above Facility's highest Emergency Rating.
- **In contrast to this, we believe that the Post-contingency action plan developed by TOP and RC is required to address potential impacts and post-contingent mitigating strategies, including but not limited to load shedding or generator tripping, while normal congestion management actions are being implemented, to ensure potential impact is localized and to prevent equipment damage.**
- Therefore, we would NOT consider SOL exceedance to exist anytime the Projected post-contingency flow is above Facility's highest Emergency Rating, but only for those situations when the Projected post-contingency flow is above the Facility's highest Emergency Rating (Rate C) for longer than 30 minutes **WITHOUT associated post-contingency action plan**.
- We recognize that there may be situations in the system when normal congestion management is not effective or has been exhausted, and the projected post-contingent loading on a facility remains greater than the highest available emergency rating. In this situation, load shedding may be the sole remaining option to address the projected post-contingency loading. The TOP and RC may decide to operate in this manner and not implement load-shedding pre-contingency if the impacts would be localized. In this case the SOL exceedance would be reportable, even though a post-contingent action plan exists, since normal congestion management is no longer taking place.

- The SDT’s concept insists on the concept “highest Emergency Rating”. Our definition is based on the concept of “post-contingency action plan”. We do recognize that issuing a new Short Term Emergency rating would be an alternative for the TOP to pursue rather than agreeing with its RC on a post-contingency action plan. **The huge practical obstacle to issuing higher emergency rating (or “Load Shed Rating”)** that the Industry always faced is that each TOP would have to **get manufacturers’ confirmations for using shorter term Emergency Ratings (such as 10-minute ratings) for every single piece of equipment** (breakers, switches, wave traps, CTs conductors, all pieces on transformers etc). Majority of manufacturers would not be even able nor willing to provide such a data. Therefore, **for practical reasons, it is almost impossible to get such a short-term ratings based on manufacturers’ data and technical facilities justifications**. Consequently, as opposed to being “pushed/forced” to using technically unjustified short-term emergency/load shedding ratings, each TOP and RC might need to define criteria within their Operating Plan for using post-contingent action plans. These criteria might be based, for sake of example, on Relay Loadability Limits of transmission facilities.

1. **Requirements 6.3 and 6.4:**

Our comments can be formulated in the following red-line (highlighted in yellow changes):

1.
 - i. *The evaluation of the potential Contingencies identified in Part 5.2 (which are not mitigated within the time-frame specified in, and in accordance with, the RC’s SOL methodology) against the actual pre-Contingency state (Real-time monitoring and Real-time Assessments) and anticipated pre-Contingency state (Operational Planning Analysis) demonstrates that instability, Cascading, or uncontrolled separation does not occur.*

The evaluation of the potential Contingencies identified in Part 5.3, (which are not mitigated within the time-frame specified in, and in accordance with, the RC’s SOL methodology) demonstrates that instability does not occur.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments of MidAmerican Energy Co. and, more so, its participation in the SDT team’s efforts since the second posting. Comments such as yours have provided focus to the SDT’s efforts since the second posting.

Those efforts have resulted in revisions to FAC-011-4, FAC-014-3, TOP-001 and IRO-008 which we believe address the concerns you raise above, and other commenters have noted. These revisions have been made to accomplish the following:

- Have SOL exceedances determined in the appropriate TOP and IRO standards rather than the FAC standards.
- The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards. In addition, numerous wording changes have been implemented within requirement R6 in response to comments such as those you have above.
- FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur”. This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.
- The measures for a few TOP and IRO standards were revised to better describe a more complete set of potential evidence that may be used to show compliance. In addition, the standard rationales have been revised to explain how this evidence may be used to show compliance with the standards.

We believe these changes, which were developed with the support of and feedback with staff from your company and others from within MISO, should address these commonly held industry concerns.

To summarize, the SDT’s standard revisions have sought to provide a common minimum framework for industry to determine SOL exceedances, where appropriate in the TOP and IRO standards, and have added process to help improve the required communications on SOL exceedances. The SDT has done this while expanding the list of evidence to minimize any resulting compliance documentation burden. We look forward to your review of our efforts with our new posting and appreciate any comments you may offer.

Sing Tay - OGE Energy - Oklahoma Gas and Electric Co. - 6, Group Name OKGE

Answer

No

Document Name	
Comment	
OKGE supports the comments provided by MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Please see response to MRO NSRF.	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
Requirement 6.2.2 should be modified to mirror 6.2.1:	
6.2.2. Voltages are within applicable emergency System Voltage Limits, provided that System adjustments could be executed and completed within the specified time duration of those emergency System Voltage Limits.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your comment. Your comment was considered and edits to R6.2.2 were made based upon it.	
Anthony Jablonski - ReliabilityFirst - 10	
Answer	No
Document Name	

Comment

ReliabilityFirst votes in the negative for the following two reasons.

1. For requirement R6 part 6.5, ReliabilityFirst believes not being permitted to plan to drop load prior to taking all other actions seems is not technically correct. Here are a few real life scenarios that ReliabilityFirst is aware of: there are Remedial Action Schemes that drop non-firm load for first contingency events. There is another Remedial Action Scheme that drops 1/3 of the total station load for a breaker failure event.

RF recommends the following changes to Part 6.5 for consideration: "In determining the System's response to any Contingency identified in Parts 5.1 through 5.3, planned load shedding [non-firm load] is acceptable [and planned shedding of firm load is acceptable] only after all other available System adjustments have been made [or where pre-approved by state regulators, and the shedding of load with Remedial Action Schemes.]

2. For Requirement R6 parts 6.1.1, 6.1.2, and 6.2.1, these three statement assume that the ONLY way that flows, voltages can be controlled within a specified time duration is with system adjustments. There are times when it is known that voltages or flows will change without the operator making any system adjustments. The operator could know that the 2nd shift at a factory ends in 5 minutes, and that there is no 3rd shift.

RF recommends the following changes to Part 6.1.1, 6.1.2 and 6.2.1 for consideration:

6.1.1 - Flow through Facilities are within Normal Ratings; however, Emergency Ratings may be used [when flows can be returned to within Normal Ratings within the specified time duration of those Emergency Ratings.]

6.1.2 - Voltages are within normal System Voltage Limits; however, emergency System Voltage Limits may be used [when voltage can be returned to within its normal System Voltage Limits within the specified time duration of those emergency System Voltage Limits.]

6.2.1 - Flow through Facilities are within applicable Emergency Ratings, [provided that flows can be returned to within Normal Ratings System within the specified time duration of those Emergency Ratings]. Flow through a Facility must not be above the Facility's highest Emergency Rating.

Likes	1	Platte River Power Authority, 5, Archie Tyson
Dislikes	0	

Response

The SDT appreciates your comments. With respect to your first observation, the SDT believes sub requirement 6.5 in R6 allows automatic load shedding as part of a RAS and does not treat that as manual load shedding. This will be described in the rationale supporting the requirement. Therefore, the examples you note would be acceptable per to proposed language. With respect to your second observation, changes were made to the subject sub requirements removing system adjustments or adding “other System changes”, with both changes being responsive to your comment.

Joe O'Brien - NiSource - Northern Indiana Public Service Co. - 6

Answer

No

Document Name

Comment

R6 uses the term “performance criteria”. This is the same term used in R6 in FAC-014-3 (see NIPSCO comments for question 4). Using the same term in two different standards with different context is confusing. For FAC-011-4 R6 NIPSCO suggests eliminating the phrase “Bulk Electric System performance criteria” and just placing a “:” after the word “following”.

Likes 0

Dislikes 0

Response

The SDT appreciates your offered comments. The SDT has eliminated the reference to performance criteria in FAC-014-2. In addition, the SDT has revised R6 and the use of performance criteria within the proposed standard. The SDT is retaining the term due to proposed FAC-011-4 R6 mapping to FAC-011-3 R2, which is the requirement in the existing standard which defines the expected level of system performance when SOLs are respected.

Andy Fuhrman - Andy Fuhrman On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Andy Fuhrman

Answer

No

Document Name

Comment

See MRO NERC Standards Review Forum comments.

Likes 0

Dislikes 0

Response

Please see response to MRO NERC Standards Review Forum comments.

Michael Cruz-Montes - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE

Answer No

Document Name

Comment

CenterPoint Energy Houston Electric, LLC (“CenterPoint Energy”) does not agree with the performance criteria in FAC-011-4 Requirement R6 and believes that the language is ambiguous and unnecessary. In particular, the use of the term “instability” in Requirements R6.1.3 and R6.2.3 without any qualifiers may broaden the scope of the language, which could lead to inconsistent results. CenterPoint Energy recommends that the SDT revise the language in Requirements R6.1.3 and R6.2.3 to clarify that instability that adversely impacts the reliability of the BES is what is intended.

Likes 0

Dislikes 0

Response

The SDT appreciates your comments offered. The quoted term (instability) and language was taken from the definition of IROL in the NERC glossary of terms. The SDT did include in its R6 impact on the “BES” to limit the potential scope of instability, per your comment. The SDT also made many other revisions to R6 to improve its clarity.

Oliver Burke - Entergy - Entergy Services, Inc. - 1

Answer No

Document Name	
Comment	
Entergy supports comments submitted by MidAmerican Energy Company.	
Likes 0	
Dislikes 0	
Response	
Please see response to MidAmerican Energy Company.	
Kelsi Rigby - APS - Arizona Public Service Co. - 5	
Answer	No
Document Name	
Comment	
AZPS does not have an issue with the performance criteria set forth in FAC-011-4 R6. However, the use of performance criteria could still result in ambiguity regarding what qualifies as a “SOL Exceedance.” For this reason, AZPS recommends that the SDT reconsider use of a defined term for “SOL Exceedance.” Additionally, if there is intent to continue to use the term “SOL exceedance” within the body of reliability standards, then both industry and the ERO Enterprise would benefit from the clarity that would result from a definition of the term.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your comment offered. While the SDT supports your perspective in the value of an explicit SOL exceedance definition, it was apparent from prior postings and comments that the industry as a whole did not. Our latest FAC-011-4 revision, with the proposed R6, is our attempt at providing a minimum set of performance criteria across the industry for establishing SOL exceedances. R6 should be the minimal basis any RC uses to define SOL exceedances within its footprint. We hope you can understand our rationale and support the proposed FAC-011-4 language in our next posting.	

Kevin Salsbury - Berkshire Hathaway - NV Energy - 5

Answer

No

Document Name

Comment

NV Energy supports the SDT's proposal to create a definition of SOL exceedance, **as long as that definition would NOT cause unintended consequences in terms of setting unrealistic expectations or imposing additional and undesirable administrative compliance burden on numerous entities.** In this effort, the SDT should carefully assess repercussions on reliability and efficient market operations

NV Energy believe the SDT took an **inappropriate approach of incorporating that controversial and arguable (although somewhat modified) definition of SOL Exceedance as a performance criteria in Requirement 6 of FAC-011-4 Standard. We consider this pathway as potentially worse and more risky in comparison with coming up with definition of SOL Exceedance. The reason for such a characterization is that by substituting definition of SOL Exceedance via embedding it as a performance criteria into FAC-011-4, the SDT would expose a number of TOPs and RCs to risk of directly violating FAC-011-4 (Requirement 6) and associated penalties, if (non-agreed upon in terms of definition) exceedances of system operating limits occur either in RTA or OPA.**

Furthermore, we believe that addressing a fundamental concept of SOL Exceedance definition needs to be done within the framework of IRO and TOP standards, where it inherently and logically belongs. We do not agree with an approach of moving that cornerstone of reliable operations from IRO/TOP set of standards to the FAC set of standards. In other words, we believe that the present context of defining what constitutes SOL exceedance **and reacting to it by initiating Operating Plan (per IRO-008-2-R2 and TOP-001-4-R14) is far better** than directly exposing large number of entities to the risk of non-compliance without appropriate considerations related to physical constraints that need to be overcome during implementation of Operating Plans, in a timely manner.

Fundamental principles and complexities of real power systems do not allow for ignoring the time dimension that always exist when implementing corrective control actions when temporary exceedances of SOL occur, especially in RTA. That was, unfortunately, overlooked in proposed versions of FAC-011-4 and FAC-014-3.

The role of SOL exceedance definition (or performance criteria within FAC-0114-R6), in our opinion, should be to clearly and unambiguously formulate critical operational borderlines of reliable operations, while **respecting existing limitations of existing transmission infrastructure and human resources that operate that infrastructure.**

We appreciate that the SDT listened to the industry's comments and gradually improved the definition of SOL exceedance. In particular, we are pleased that the SDT now considers exceedance of Emergency (rather than Normal) limits as a reportable event.

However, there is a problem with using the phrase *"could be executed and completed within the specified time duration of those Emergency Ratings/Voltage Limits"*. We agree with previous commenting of: *"This implies that in order to use the range between normal and emergency rating for an anticipated contingency, a timing analysis needs to be performed before the contingency occurs to determine if ramp rates, start-up times and location and amount of load shedding are adequate.... This analysis seems to be better served as an internal control not a compliance obligation."*

The implementation risk and compliance risk associated with this language is substantial and very concerning. Based on the language, TOP is expected to perform and document a timing analysis to determine if the adjustments could be executed within the specified time duration of Emergency Ratings each and every time when TOP performs RTA and find its facilities operating between Normal and Emergency Rating (either in real-time or on a contingency basis). It should be noted that such a timing analysis in real-time is difficult and requires significant time and resources. If such timing analysis cannot be performed (or is not performed due to lack of time or other reasons, or simply not logged/recorded) that may trigger non-compliance, concerning FAC-011 R6 in conjunction with FAC-014 R6

The second problem is that it is necessary to differentiate between flow exceedances and voltage exceedances in terms of risk to the equipment and the time tolerance.

We share the industry recommendation of the following definition:

- ***Actual steady state flow on a BES Facility is greater than the Facility's highest Emergency Rating for any time period.***
- ***Actual steady state flow on a BES Facility is above the Normal Rating but below the next Emergency Rating for longer than the time frame of the next Emergency Rating.***
- ***Actual steady state voltage on a BES Facility is greater than the emergency high voltage limit for time frame identified by the TOP.***
- ***Actual steady state voltage on a BES Facility is less than the defined emergency low voltage limit for time frame identified by the TOP.***

1. **Requirements 6.1.3 and 6.2.3** refer to preventing instability, cascading or uncontrolled separation.

- We find it inappropriate that **the proposed definition does not recognize time-frame associated with exceedances of established stability limits**. If not recognized, this can lead to hundreds of meaningless (nuisance) exceedances (for sake of an example, such as those that last less than 1 minute and have magnitude of less than 1%). More importantly, it should be noticed that even present definition of the IROL violation has associated Tv time threshold (or 30 minutes) before it becomes a compliance issue. Proposed formulation of 6.1.3 and 6.2.3 should include the time threshold (in analogy with Tv) so that RCs/TOPs would be given specified time frame to correct exceedance, before it becomes compliance issue.

We recommend the industry discussed following definition:

- ***Any established stability limit (non-IROL) or limit that may cause cascading outages or uncontrolled separation shall not be exceeded for longer than the 30 minutes, or defined by Operating Plan.***
-
- 1. **Requirement 6.2.1** is of particular importance and probably the single, most frequent concern in present industry's practice. MidAmerican Energy Company appreciates SDT's reasonable approach of listening to the industry's comments and gradually improving the definition of SOL exceedance/performance criteria. However, we would like to draw the SDT's attention to the following issues with their present formulation of the Requirement 6.2.1, which states that:

“provided that System adjustments could be executed and completed within the specified time duration of those Emergency Ratings. Flow through a Facility must not be above the Facility's highest Emergency Rating.”

We would like to point out several issues with regard to this formulation:

- First, **the proposed definition does not recognize time-frame associated with exceedances of the Facility's highest Emergency Rating**. If not recognized, this can lead to hundreds of meaningless (nuisance) exceedances (for sake of an example, such as those that last less than 1 minute and have magnitude of less than 1%). Others exceedances may last several minutes(5-30 minutes, just for sake

of example) due to time constraints associated with operators' response to these exceedances and physical reality/timing of corrective control actions that need to be implemented. More importantly, it should be noticed that even present definition of the IROL violation has associated Tv time threshold (or 30 minutes) before it becomes a compliance issue. Proposed formulation of 6.2.1 should include the time threshold (in analogy with Tv) so that RCs/TOPs would be given specified time frame to correct exceedance, before it becomes compliance issue.

- Second, regarding the phrase *“Flow through a Facility must not be above the Facility’s highest Emergency Rating”*, the SDT’s formulation appears to be based on the Project 2014-03 Whitepaper. We need to draw attention of the SDT that the original version of the NERC White Paper (from May 2014) was stating that **“Post-contingency flow in this range is not acceptable unless Operating Plan address reliability impact so that it has localized impact”**. Subsequent version of the NERC White Paper (revision of January 2015) introduced statement that *“Post-contingency flow in this range is not acceptable”*. **This revision, with a major impact, was never presented to the industry, never approved by the Industry and, in our opinion, was step in the wrong direction. The most recently published revision adds clarity and improved formulations, but still departs from the original concept and ignores time dimension that is necessary to implement corrective control actions, especially for inevitable short term exceedances in RTA, on a contingency basis.**
 - Third, the SDT’s proposed definition of the post-Contingency flow SOL exceedance **fails to recognize the important difference between actual, pre-contingency SOL exceedance and calculated, post-contingency RISK of SOL exceedance**. This attempt to include both of them under the single, generic term *“performance criteria/SOL exceedance”* may easily cause an incorrect expectation that TOP/RC’s control actions response to these two types of exceedances should be similar, in terms of timing, logging and recording.
- Fourth, **it is perfectly clear and understandable that both of these types of exceedances require and should trigger implementation of a control action from Operating Plan, but they should be treated *differently in terms of urgency and severity of mitigating control actions*, as they have different repercussions on system reliability.**
- **The implementation risk and compliance risk associated with this language is substantial and very concerning. Based on the language, TOP is expected to perform and document a timing analysis to determine if the adjustments could be executed within the specified time duration of Emergency Ratings each and every time when TOP performs RTA and find its facilities operating between**

Normal and Emergency Rating (either in real-time or on a contingency basis)? It should be noted that such a timing analysis in real-time is difficult and requires significant time and resources. If such timing analysis cannot be performed (or is not performed due to lack of time or other reasons, or simply not logged/recorded) that may trigger non-compliance, concerning FAC-011 R6 in conjunction with FAC-014 R6.

• Fifth, regarding the **language in FAC-011-4 (R6.2.1)** *“Flow through a Facility must not be above the Facility’s highest Emergency Rating”*, let’s consider the following scenario. TOP operates in REAL-TIME with one scheduled outage (N-1 topology). Then a fault occurs (single event such as bus fault or similar) and takes out of service two (or more) facilities, thus bringing the system in real-time into N-3 topology condition. Now, RTCA starts showing overloading for next single contingency (N-4).

The concern is if the language in the draft of the standard assumes that **the performance criteria are identical, independently of the system state** (i.e. if the system is in N-1 as opposed to N-3, or even more severe, topology conditions). We certainly understand that in OPA such a scheduled outage would not be approved if it causes SOL exceedances. However, what will be applicable performance criteria if that event happens in real-time due to single event? Of course TOP will implement its Operating Plan to correct the exceedance, but due to significantly deteriorated topology (for which the system was never designed) it may take longer time period to eliminate exceedance on a contingency basis. Or, analysis may show that only firm load shedding may eliminate the exceedance.

The issue is that if the same performance criteria are applicable independently of topology conditions, in order to avoid performance criteria violation (on a contingency basis) the only viable option might be pre-contingent firm load shedding to correct contingency based (not real-time) exceedance

We recommend the following industry discussed definition for 6.2.1:

- ***Projected post-Contingent loading on a BES Facility is greater than the highest Emergency Rating for longer than 30 minutes with NO agreed upon Post Contingency Action Plan that would mitigate the condition if the Contingency were to occur.***

We believe there is need for using a Post-contingency action plan concept

- The main difference between our proposed definition and the SDT's proposed definition is the **concept of post-contingent action plan**. *The Post-contingency action plan is the RC's/TOP's agreed upon control action to be used while the normal congestion management processes are attempting to return the projected post contingent flow within longer-term rating.* It is very important to note that the Post-contingency action plans are **NOT** a vehicle to justify continual operation where the projected post contingent flow is above Facility's highest Emergency Rating.

In contrast to this, we believe that the Post-contingency action plan developed by TOP and RC is required to address potential impacts and post-contingent mitigating strategies, including but not limited to load shedding or generator tripping, while normal congestion management actions are being implemented, to ensure potential impact is localized and to prevent equipment damage.

- Therefore, we would NOT consider SOL exceedance to exist anytime the Projected post-contingency flow is above Facility's highest Emergency Rating, but only for those situations when the Projected post-contingency flow is above the Facility's highest Emergency Rating (Rate C) for longer than 30 minutes **WITHOUT associated post-contingency action plan**.
- We recognize that there may be situations in the system when normal congestion management is not effective or has been exhausted, and the projected post-contingent loading on a facility remains greater than the highest available emergency rating. In this situation, load shedding may be the sole remaining option to address the projected post-contingency loading. The TOP and RC may decide to operate in this manner and not implement load-shedding pre-contingency if the impacts would be localized. In this case the SOL exceedance would be reportable, even though a post-contingent action plan exists, since normal congestion management is no longer taking place.
- The SDT's concept insists on the concept "highest Emergency Rating". Our definition is based on the concept of "post-contingency action plan". We do recognize that issuing a new Short Term Emergency rating would be an alternative for the TOP to pursue rather than agreeing with its RC on a post-contingency action plan. **The huge practical obstacle to issuing higher emergency rating (or "Load Shed Rating")** that the Industry always faced is that each TOP would have to **get manufacturers' confirmations for using shorter term Emergency Ratings (such as 10-minute ratings) for every single piece of equipment** (breakers, switches, wave traps, CTs conductors, all pieces on transformers etc). Majority of manufacturers would not be even able nor willing to provide such a data. Therefore, **for practical reasons, it is almost impossible to get such a short-term ratings based on manufacturers' data and technical facilities justifications**. Consequently, as opposed to being "pushed/forced" to using technically unjustified short-term emergency/load shedding ratings, each TOP and RC might need to define criteria within their Operating Plan for using post-contingent action plans. These criteria might be based, for sake of example, on Relay Loadability Limits of transmission facilities.

Likes	0
Dislikes	0
Response	
<p>The SDT appreciates the comments you offered. The SDT has made changes to Requirement R6 that it believes provides additional clarity. The SDT believes this is an important and critical part of creating consistency as to what constitutes an SOL exceedance which provides uniformity for the industry and a commensurate improvement to reliability. These changes are consistent with the SOL Whitepaper. The SDT has attempted to address some concerns of unnecessary compliance burden to include addition verbiage in proposed TOP-001-6 M14 as well as providing FAC-011-4 R7 and corresponding inclusion of the SOL methodology into TOP-001-6 R15.</p> <p>The SDT has tried to provide clarity in performance requirements captured in R6 such that it is clear that not meeting performance requirements constitutes an SOL exceedance, which then triggers other requirements to mitigate and communicate such exceedances as identified in the IRO and TOP standards (e.g. implementation of Operating Plan). SOL exceedance does not equate to a violation of the requirements and there is no required timeframe to mitigate an SOL exceedance other than the subset identified to be IROs. However, an entity is required to implement its Operating Plan as identified in TOP-001 R14. So not meeting performance requirements (i.e. SOL exceedance) does not constitute a violation, but rather a violation would occur only if the responsible entity did not fulfill the obligations of the requirements that surround how to respond to SOL exceedances for example.</p>	
Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations	
Answer	No
Document Name	
Comment	
<p>We believe the SOL exceedance definition did create an unnecessary compliance burden. However, the approach the SDT took does not reduce the compliance burden by moving the SOL Exceedance definition to a requirement. Requirement R6 is overly complicated and confusing. It has 11 sub-parts and references other requirements four separate times. Compliance standards should be clear and should be able to stand alone without the need to cross reference other requirements.</p>	
Likes	0

Dislikes	0
Response	
<p>The SDT appreciates the comments you offered. The SDT has made changes to Requirement R6 that it believes provides additional clarity. The SDT believes this is an important and critical part of creating consistency as to what constitutes an SOL exceedance which provides uniformity for the industry and a commensurate improvement to reliability. The SDT has attempted to address some concerns of unnecessary compliance burden to include addition verbiage in proposed TOP-001-6 M14 as well as providing FAC-011-4 R7 and corresponding inclusion of the SOL methodology into TOP-001-6 R15.</p>	
Tommy Drea - Dairyland Power Cooperative - 5	
Answer	No
Document Name	
Comment	
<p>DPC supports the comments of MRO NSRF.</p>	
Likes	0
Dislikes	0
Response	
<p>Please see response to MRO NSRF.</p>	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP Standards Review Group	
Answer	No
Document Name	
Comment	

The SPP Standards Review Group (SSRG) believes that the performance criteria as described in R6 should be simplified and imbedded where appropriate in the other requirements of FAC-011-4. For example, performance criteria pertaining to steady state voltage should be included in R3.

Likes 0

Dislikes 0

Response

The SDT appreciates your comments. The SDT has revised the language in R6 to simplify it based on comments. However, the SDT believes separating the performance criteria into the other requirements would make the revised standards more confusing. The proposed FAC-011-4 R6 maps to the existing FAC-011-3 R2, which is a separate set of requirements that establishes performance expectations when meeting SOLs per the RC's SOL methodology. The SDT believes maintaining R6 separately minimizes the complexity of a complex topic.

Spencer Tacke - Modesto Irrigation District - 4

Answer

No

Document Name

Comment

For Pre-Contingency conditions, emergency limits should not be allowed to be used.

Likes 0

Dislikes 0

Response

The SDT appreciates your comment. The SDT initially wrote the sub requirements in R6 just as your comment noted, but subsequent discussion showed that unexpected real time condition changes, such as variations in load level or transfers, can result in System changes which may push thermal or voltage performance beyond normal limits. This led the SDT to include the use of emergency limits potentially for pre-contingency conditions for non-contingent events and maintain consistency with the SOL white paper.

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

Answer	No
Document Name	
Comment	
<p>Duke Energy requests further clarification on the use of “pre-Contingency state” in R6.2. Was it the drafting team’s intent that an RC should anticipate a “pre-Contingency state”? Was this a typographical error? Should “post-Contingency state” be used instead?</p> <p>Duke Energy is unclear on the expectations for R6.4. Is it the drafting team intent that with the use of the term “demonstrates” in R6.4, that entities are required to do stability studies in Real-time? The drafted language appears to be more suitable for Planning Coordinators and Transmission Planners, not for Operators of the BES in Real-time. We suggest the drafting team consider the following language for R6.4:</p> <p><i>“The evaluation of the potential Contingencies identified in Part 5.3 demonstrates that the system will be operated within stability limits.”</i></p> <p>Should other Time Horizons be considered for R6 as well, (Same Day)?</p>	
Likes	0
Dislikes	0
Response	
<p>The SDT appreciates your comments. The SDT has removed the pre-contingency state reference in 6.2 and hopefully provided more clear and concise language in the proposed requirement. With respect to your second question, the SDT does not expect operating entities to perform real time stability analyses. Based on this and other comments, previously proposed R6.4 has been removed. The SDT considered Same Day, but thought it best to include the furthest out Time Horizon (Operations Planning), recognizing that SOL exceedances, due to the inclusion of Real Time Assessments, would be Same Day and Real Time also.</p>	
<p>Douglas Webb - Douglas Webb On Behalf of: Allen Klassen, Westar Energy, 6, 3, 1, 5; Bryan Taggart, Westar Energy, 6, 3, 1, 5; Derek Brown, Westar Energy, 6, 3, 1, 5; Grant Wilkerson, Westar Energy, 6, 3, 1, 5; Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; Jennifer Flandermeyer, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; John Carlson, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; - Douglas Webb</p>	
Answer	No

Document Name	
Comment	
General Observation	
<p>The companies believe reliability and establishing compliance thresholds are better served by keeping performance criteria within the performance Standards, e.g. TOP and IRO Standards, and keeping Standards that establish a methodology free from such performance criteria.</p> <p>Like the SDT’s statement in Question 3, the companies agree that to address the issue, revisions would likely need to be made within a TOP or IRO standard and the Project 2015-09 SAR does not specifically authorize the SDT to modify those standards.</p>	
Suggestion: Add Flexibility	
<p>The companies recognize each Registered Entities’ system is unique in design, complexity, footprint, and Facilities. To address the differences between systems across the BES, the companies suggest FAC-011-4 R6 language provide flexibility to accomplish the reliability outcomes offered in the proposed revisions by leveraging entities’ FAC-008 Facility Rating Methodology and applicable internal documents to guide:</p> <ul style="list-style-type: none"> • When Normal and Emergency Ratings/Voltage limits are used under pre or post-contingent conditions, and • The allowable time duration for the applicable condition. 	
Suggestion: Remove Prescriptive Language	
<p>Also, the companies suggest removing prescriptive language to provide entities more flexibility executing Requirement 6. Replacing the NERC Glossary Terms, “Normal Ratings” and “Emergency Ratings” with the words “applicable ratings” or “applicable voltage limits” will provide the suggested flexibility without compromising BES reliability.</p>	
Likes	0
Dislikes	0
Response	

The SDT appreciates your comments. The SDT explored revisions to the TOP and IRO standards to better incorporate the performance requirements and their implications with SOL exceedances. After much effort and dialogue within the SDT and with other industry representatives, the SDT is revising R6 to allow the RC, within its methodology, to define what constitutes an SOL exceedance, using as a starting basis the performance criteria listed in a revised version of R6.

With that said, and while recognizing the stated interpretation of the standards, the SDT did not see the TOP and IRO standards with any obvious location to define System performance criteria. In addition, while the TOP and IRO standards use “SOL exceedance” numerous times, there is no definition of the term anywhere within the standards. Recognizing this and past comments on the SDT’s prior postings on FAC-011, the SDT is revising FAC-011-4 R6 to allow each RC to define SOL exceedances in their methodology, using as an initial basis the performance criteria in R6. This tact should allow each RC the flexibility needed to account for any unique concerns within its footprint while allowing a more seamless use of SOL exceedances defined by this methodology in the TOP and IRO standards.

With regard to your comments on ratings, the FACT SDT has, over its three years of existence, discussed the ratings provided by FAC-008 numerous times, and believes that the ratings supplied by the facility owners via FAC-008 should be those used by the TOPs and RCs. Furthermore, proposed R2 and R3.2 in FAC-011-4 note that owner facility ratings should be respected for thermal and voltage, respectively.

The SDT discussed at length whether Normal / Emergency limits versus “applicable” limits were the better terms to be used in the proposed standards. The consensus was that “applicable” ratings was too general a term, and Normal and Emergency limits could accommodate any ratings / limits provided by the facility owners. The language in R3 already allows numerous methods by which a TOP can devise a set of voltage limits for all, or some, of the set of facilities within its footprint for the purpose of determining SOLs, which should be responsive to your comment on using “applicable voltage limits”.

Terry Bilke - Midcontinent ISO, Inc. - 2

Answer	No
Document Name	
Comment	

Although the current FAC standards include performance criteria, MISO believes that they should reside in IRO and TOP standards. The FAC standard should focus on defining acceptable Operating Limit methodologies. With respect to the proposed performance criteria, MISO has the following concerns:

- Revised standard and SOL exceedance definition appears to imply that exceeding the System Operating Limit (SOL) is not allowed. This makes SOLs more restrictive in management than IROs, for which there is an allowance to exceed the rating as long as the load is reduced to below the rating prior to exceeding the Tv of the facility. There is no Tv allowance for SOLs, as the definition is currently written.

In particular, the performance criteria as written fail to allow time for the RC or TOP to respond to an event, and readjust the system without immediately putting them in violation of the performance criteria. For example, RTA will show all elements within their emergency ratings per the criteria, but then a contingency occurs and the next RTA shows one or more elements above the highest emergency rating.

- Transmission system could be underutilized, if the SOL Exceedance definition is implemented as currently written.
- Planning standards recognize exceedances of operating limits will occur, and require a plan to mitigate those exceedances. This definition does not allow for the same to occur in Operations
- R6.5 appears to disallow load shedding that may have been specifically designed as part of a RAS or UFLS scheme.

Finally, any change to SOL exceedance in the IRO and TOP standards need to be clear that exceeding a non-IROL SOL, particularly post contingency, is not a violation of any operating standard or criteria.

Likes	0
Dislikes	0
Response	

The SDT appreciates your comments. The SDT appreciates the comments you have provided. The SDT has made several edits to Requirements R4, R5, and R6 and their subparts that the SDT believes addresses many of the comments. The SDT has tried to provide clarity in performance requirements captured in R6 such that it is clear that not meeting performance requirements constitutes an SOL exceedance which then triggers other requirements to mitigate and communicate such exceedances as identified in the IRO and TOP standards. So not meeting performance requirements does not constitute a violation, but rather a violation would occur only if the responsible entity did not fulfill the obligations of the requirements that surround how to respond to SOL exceedances for example.

Requirement R6.5 from the second posting, which is now requirement R6.4 in the latest version of FAC-011-4, was not intended to address what mitigation actions are acceptable for inclusion in an Operating Plan, including RAS or other post-contingency mitigation actions (including undervoltage relays that are not specifically part of an overall Under Voltage Load Shed (UVLS) scheme). The SDT did capture that “planned manual load shedding”, if included in an Operating Plan, should be a measure of last resort. With respect to RAS, requirement R4.6 requires that the RC document in their SOL methodology the “allowed uses of Remedial Action Schemes and other automatic post-Contingency mitigation actions in establishing stability limits used in operations”. However, R4.7 requires “that the use of underfrequency load shedding (UFLS) programs and Undervoltage Load Shedding (UVLS) Programs are not allowed in the establishment of stability limits”. The use of UVLS and UFLS as a safety net and not for performance criteria or in the establishment of a stability limit is consistent with FERC commission comments in FERC Order 818.

Laura McLeod - NB Power Corporation - 5

Answer	No
Document Name	
Comment	
Do not agree with 6.5, too restrictive. Should be allowed to apply non-consequential load loss.	
Likes	0
Dislikes	0
Response	
The SDT appreciates your comment.	

Requirement R6.5 from the second posting, which is now requirement R6.4 in the latest version of FAC-011-4, was not intended to address what mitigation actions are acceptable for inclusion in an Operating Plan, including RAS or other post-contingency mitigation actions (including undervoltage relays that are not specifically part of an overall Under Voltage Load Shed (UVLS) scheme). The SDT did capture that “planned manual load shedding”, if included in an Operating Plan, should be a measure of last resort. With respect to RAS, requirement R4.6 requires that the RC document in their SOL methodology the “allowed uses of Remedial Action Schemes and other automatic post-Contingency mitigation actions in establishing stability limits used in operations”.

Amy Casuscelli - Amy Casuscelli On Behalf of: Michael Ibold, Xcel Energy, Inc., 3, 1, 5; - Amy Casuscelli

Answer

No

Document Name

Comment

The language mandates evaluation of all contingencies listed in R5.1.1 of FAC-011-4 as part of the Real Time Assessment (RTA) and the Operational Planning Analysis (OPA) without exception.

R6.2.1 - The flows on transmission element may exceed the applied Emergency Rating during the dynamic time period but there is likely no risk to the system. Although the first phrase "applicable Emergency Ratings" might seem to provide the flexibility, this means an entity must know the "applicable Emergency Rating" for a particular dynamic loading and time period for each piece of equipment and each piece of equipment would need to be monitored in a dynamics analysis

R6.2.3, this language pulls in dynamic analysis of all of these contingencies for both the RTA and OPA

6.3. The evaluation of the potential Contingencies identified in Part 5.2 against the actual pre-Contingency state (Real-time monitoring and Real-time Assessments) and anticipated pre-Contingency state (Operational Planning Analysis) demonstrates that instability, Cascading, or uncontrolled separation does not occur.

6.4. The evaluation of the potential Contingencies identified in Part 5.3 demonstrates that instability does not occur.

R6.3 and R6.4 contain the same problems. It is infeasible to run dynamic simulations as part of the RTA and it is very complex to do so for the OPA. At least in this case, R5.2 and R5.3 allow the RC to provide a very limited list of contingencies.

6.5. In determining the System’s response to any Contingency identified in Parts 5.1 through 5.3, planned load shedding is acceptable only after all other available System adjustments have been made.

R6.5 - The standard incorrectly eliminates planned load shedding from consideration when RAS or UVLS programs may have specifically established to take such action to maintain system stability for the particular contingencies under consideration.

Likes	0
Dislikes	0

Dislikes	0
----------	---

Response

The SDT appreciates your comments. The SDT believes steady state contingency analysis of the System should include all contingencies defined in R5.1.1 of FAC-011-4. However, the SDT has revised R4.2 such that only those contingencies expected to produce the most severe stability results need to be examined. This prevents having to test the entire contingency list for stability, as you commented for sub requirement 6.2.3.

The SDT included the phrase “steady state” to allow transient flow / voltage conditions to not be applicable to these sub requirements.

R6.3 has been rewritten and previously proposed R6.4 removed. IT was never the intent that either R6.3 or R6.4 require real time stability analysis. The SDT was silent on the question in R6 to allow entities to continue their present practices, whether it was using off-line analyses to establish defined stability limits which are monitored in terms of pre-contingent conditions in real time or performing real-time stability analysis. This will be documented in the rationale for this requirement.

Finally, with regard to your comment on R6.5, there is no preclusion to using RAS or UVLS programs for load shedding. The sub requirement speaks only to manual load shedding needing to occur after all other actions are taken. RAS and UVLS are not manual load shedding. The SDT has included “manual” to FAC-011-4 R6.4 to clarify that automatic load shedding schemes would not be used to meet performance criteria and that load shed is a measure of last resort. The use of UVLS as a safety net and not for performance criteria or in the establishment of a stability limit is consistent with FERC commission comments in FERC Order 818.

Brandon McCormick - Brandon McCormick On Behalf of: Carol Chinn, Florida Municipal Power Agency, 6, 4, 3, 5; Chris Gowder, Florida Municipal Power Agency, 6, 4, 3, 5; David Owens, Gainesville Regional Utilities, 3, 1, 5; Don Cuevas, Beaches Energy Services, 1, 3; Ginny Beigel, City of Vero Beach, 3; Joe McKinney, Florida Municipal Power Agency, 6, 4, 3, 5; Ken Simmons, Gainesville Regional Utilities, 3, 1, 5; Neville Bowen, Ocala Utility Services, 3; Randy Hahn, Ocala Utility Services, 3; Richard Montgomery, Florida Municipal Power Agency, 6, 4, 3, 5; Steven Lancaster, Beaches Energy Services, 1, 3; Tom Reedy, Florida Municipal Power Pool, 6; - Brandon McCormick, Group Name FMPA

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

FMPA supports the comments submitted by MRO.

Likes 0	
---------	--

Dislikes 0	
------------	--

Response

Please see response to MRO.

Douglas Johnson - American Transmission Company, LLC - 1

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

American Transmission Company LLC (ATC) supports the efforts of the SDT to clarify for the industry what is considered SOL exceedance in the context of the IRO and TOP Standards. We appreciate the SDT listening to the concerns raised by industry regarding the previously proposed SOL Exceedance definition and we agree with the SDT's approach to abandon that potential change. We believe the proposed performance criteria in FAC-011-4 Requirement R6 seems to capture the essence of SOL exceedance. We do agree with the SDT's concept

that the Reliability Coordinator's (RC) SOL Methodology must address the system performance criteria to ensure consistent identification of SOLs.

However, ATC is concerned the proposed language creates a significant reliability/compliance burden for RCs and Transmission Operators (TOP) as follows:

- R6.2 - The language mandates evaluation of all contingencies listed in R5.1.1 of FAC-011-4 as part of the Real Time Assessment (RTA) and the Operational Planning Analysis (OPA) without exception. When coupled with R6.2.3, this language pulls in dynamic analysis of all of these contingencies for both the RTA and OPA. This is an infeasible expectation for the RC and TOP to include in their RTAs and OPAs, since R5.1.1 contains no caveats to limit the list of applicable single contingencies.
- R6.2.1 - The flows on a transmission element may exceed the applied Emergency Rating during the dynamic time period, but there is likely no risk to the system. Although the first phrase "applicable Emergency Ratings" might seem to provide the flexibility, this means an entity must know the "*applicable Emergency Rating*" for a particular dynamic loading and time period for each piece of equipment and each piece of equipment would need to be monitored in a dynamics analysis. It may be that the SDT does not intend to pull in dynamics in 6.2.2 but it is a logical reading of the standard.
- R6.2.3 - As noted above, although this is the desired result, it is infeasible to perform dynamic analyses of all R5.1.1 contingencies as part of either an RTA or an OPA. In fact, it is an extremely expensive proposition to perform any real time dynamic simulations due to the complexities of maintaining an accurate dynamic model that incorporates traditional transmission equipment let alone the myriad of user written or proprietary dynamic models in use today for FACTS devices and variable generation.
- R6.3 and R6.4 contain the same problems as noted above. It is infeasible to run dynamic simulations as part of the RTA and it is very complex to do so for the OPA. At least in this case, R5.2 and R5.3 allow the RC to provide a very limited list of contingencies. Still, even with a limited list, the language of R6 and its sub-parts does not limit the scope of what a TOP would be required to run under FAC-014-3 (see R2 of that standard). Rather, FAC-011-4 R6 language implies that a TOP would be required to evaluate all of the contingencies identified by an RC, not just those that apply to the TOP's footprint. Note that FAC-014-3 R2 limits the TOP to identifying SOLs to its footprint, but it does not limit the contingencies a TOP would need to consider.
- R6.5 - The standard incorrectly eliminates planned load shedding from consideration when a RAS or UVLS programs may have specifically established the need to take such action to maintain system stability for the particular contingencies under consideration.

ATC offers the following proposed improvements to address the comments above:

- R6.1.1, R6.1.2, R6.2.1 and R6.2.2 could be improved by clarifying that these sub-requirements are only describing steady-state conditions. Each requirement could have the following leading statement added: *"Under steady-state analysis:"*.
- In addition, R6.2.1 and R6.2.2 would also benefit from adding the word *"Anticipated"* ahead of the terms *"Flow"* and *"Voltages"* in these requirements, respectively, to make it clear that these are potential system flows and voltages, not real time flows and voltages, being evaluated.

Regarding the scope of dynamic simulations, the best location to make modifications is likely the R5 and R5.1 language, not R6. Proposed modifications are as follows:

- R5 - Strike *"and performing the Operational Planning Analysis (OPAs) and Real-time Assessments (RTAs) for the area under study"* since this language is redundant to the R6 performance criteria language that will require these contingencies to be evaluated as part of the RTA and OPA. With this removed, R5 is tailored to only describe what contingency events need to be examined for the identification of SOLs.
- R5.1 - Remove the language regarding *"determining stability limits and performing OPAs and RTAs"* and add *"for use in determining steady state SOLs"*, since the SOL methodology should require examination of all of the single contingencies listed under R5.1.1 using steady-state analysis. The contingencies to examine for dynamics will be a very small list (hopefully) and can be adequately addressed by modifications to R5.3. should require examination of all of the single contingencies listed under R5.1.1 using steady-state analysis. The contingencies to examine for dynamics will be a very small list (hopefully) and can be adequately addressed by modifications to R5.3.
- R5.2 - Remove *"for use in performing Operational Planning Analysis and Real-time Assessments"* since, again, this is adequately covered by R6, and add in language as follows *"for use in determining steady state SOLs"*.
- R5.3 - Strike the word *"additional"* from the existing R5.3 language and add the following to the end of the requirement: *"where the identified single Contingency events involving the loss of a generator, transmission circuit, transformer, shunt device, or single pole block in a monopolar or bipolar high voltage direct current system must simulate either: (a) Normal Clearing of a single phase to ground or three phase Fault (whichever is more severe) or (b) tripping without a Fault condition"*.

- Regarding the TOP performing a certain set of contingencies, the R6.2, R6.3 and R6.4 language could all be modified to state: *"The evaluation of applicable potential single Contingencies ..."* (for R6.2) and *"The evaluation of the applicable potential Contingencies ..."* (for R6.3 and R6.4).
- R6.5 could be improved by clarifying that RAS and UVLS actions should be implemented in the stability analysis, as applicable. The SDT should also recognize that underfrequency load shedding (UFLS) may be a necessary part of system stabilization once a RAS operates if that RAS is creating a planned islanded system. As such, UFLS may also be a warranted load shedding component when performing stability analysis. R6.5 language could be modified by adding *"planned load shedding, other than Remedial Action Scheme (RAS) or UVLS action, is acceptable ..."* and then adding a new sentence that reads, *"The use of UFLS programs should only be simulated when incorporated as part of the system design to maintain stability (e.g., RAS)."*

Likes 0

Dislikes 0

Response

The SDT appreciates the comments you have provided. The SDT has made several edits to R4, R5, and R6 and their subparts that the SDT believes addresses many of the comments.

The SDT has revised the sub requirement in R4.2 to clarify that a subset of Contingencies may be used that are expected to produce more severe System impacts on its portion of the BES.

The SDT has revised the sub requirements in R6 that deal with stability and have tried to remove that text which implies a need to perform real-time stability analysis. It is not the intent of the SDT to require any entity to perform real-time stability analysis as part of their Real Time Assessments.

Requirement R6.5 from the second posting, which is now requirement R6.4 in the latest version of FAC-011-4, was not intended to address what mitigation actions are acceptable for inclusion in an Operating Plan, including RAS or other post-contingency mitigation actions (including under voltage relays that are not specifically part of an overall Under Voltage Load Shed (UVLS) scheme). The SDT did capture that "planned manual load shedding", if included in an Operating Plan, should be a measure of last resort. With respect to RAS, requirement R4.6

requires that the RC document in their SOL methodology the “allowed uses of Remedial Action Schemes and other automatic post-Contingency mitigation actions in establishing stability limits used in operations”. However, R4.7 requires “that the use of underfrequency load shedding (UFLS) programs and Undervoltage Load Shedding (UVLS) Programs are not allowed in the establishment of stability limits”. The use of UVLS and UFLS as a safety net and not for performance criteria or in the establishment of a stability limit is consistent with FERC commission comments in FERC Order 818.

David Jendras - Ameren - Ameren Services - 3

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

The criteria given are not clear as written such that they appear to occur in the Real-time horizon and apply to real-time operations rather than in the Operations Horizon as stated. As a consequence, the criteria do not seem to meet a methodology requirement but an operating one. Specifically, the identification of real-time monitoring and assessment as a demonstration is inappropriate for a FAC methodology requirement and belongs in TOP and IRO standards relating to operations. We believe there should not be an operating requirement in FAC-011 and in our opinion this is a poor practice and should be shelved. The Standard "families" set certain expectations and should be respected because to do otherwise will create risks of inconsistency. If the TOP and IRO standards need amending, then amend them!

Likes	0
-------	---

Dislikes	0
----------	---

Response

The SDT appreciates the comments you have offered. Your comments about applicability of the performance criteria to either the FAC or TOP/IRO standards is one made by numerous entities. The SDT has discussed this at length, while considering that the existing FAC-011-3 has performance requirements (R2 and sub requirements), no specificity exists in the present TOP and IRO standards regarding thermal, voltage and stability performance, other than stating that SOLs must be respected and SOLs exceedances acted upon, while not definition of SOL exceedance exists. Since SOL exceedances (or potential ones) can be determined from the Operational Planning Time Horizon up to and including Real Time, the SDT thought having a single common set of requirements for SOL exceedances made sense. If those existing in the TOP and IRO standards for real time, then they would have to exist for outage coordination and operating planning analyses. Rather than

include duplicates of language for SOLs throughout the TOP and IRO standards, the FAC SDT sought to include in one location, the RC methodology, the verbiage used to define SOL exceedances for the entire RC footprint. To a certain extent, that is already done with existing R2 in FAC-011-3. The SDT’s revised FAC-011-4 R6 proposes to have the RC define SOL exceedances using a common initial basis with the performance criteria in the sub requirements of R6. This application seems consistent with what an SOL methodology should contain, and currently does for many RCs at present.

The SDT has however proposed modifications to IRO-008 and TOP-001 to coordinate between those two standards and FAC-011-4. The SDT believes these modifications best address the noted concerns in a balanced fashion with other comments and feedback while maintaining some amount of flexibility for the RC in the SOL methodology.

Neil Swearingen - Salt River Project - 1,3,5,6 - WECC

Answer	No
Document Name	
Comment	
<p>SRP is concerned the language in 6.5 may be too limiting, specifically the phrase “only after all other available System adjustments”. SRP suggests either adjusting the language to state “after other reasonable System adjustments have been made”, or to state “while other system adjustments are being made”. It may be necessary to respond first with load shed while other system adjustments are being made, then returning the load. The language should allow entities to use all available tools and determine the best process for maintaining stability of the system.</p> <p>Also, SRP recommends retaining some of the language in FAC-011-3 R2.3 and R2.4 explicitly identifying acceptable post-Contingency actions. Consideration of post-Contingency actions is appropriate in an SOL methodology because the available actions delineate the “specified System configuration”. Furthermore, including the language in the standard and as a result in the RC’s SOL Methodology, helps ensure the performance criteria in the Operations Horizon is not more limiting than the performance criteria used in the Near-term or Long-term Planning Horizons.</p>	
Likes	0

Dislikes 0

Response

The SDT appreciates your comments. The SDT discussed language choices on proposed R6.5 at length. The first option you offered with the word “reasonable” was thought to be subjective, and not language that should be in a standard. The second option you offered, “while other system adjustments are being made” again seemed to suggest load could be shed when there were other options that could be deployed to preclude the load shed, for example, dispatch of uneconomic generation.

The SDT chose the language it did in the proposed sub requirement to emphasize that manual shedding of load should be done as a matter of last recourse. This does not include planned RAS or UVLS, which would have been examined with other options by the operating entities. If conditions do not allow the application of alternatives, then of course load can be shed to maintain system reliability. In this respect, the SDT agrees with your comment that load may have to be shed before other actions can be taken. This language removes no tools for maintaining system reliability; it merely states that manual load shed should be used only after exhausting all other options. Additional description is offered in the posted rationale.

With regard to your comment to retaining language from FAC-011-3 R2.3 and R2.4, proposed R6 retains the option to shed load. Existing R2.3.1 goes without saying except for the final phrase “or by the affected area”; radial or faulted elements result in lost load when those elements are lost. R2.3.2 is a less specific, more flexible way of stating what the SDT did in R6. The SDT did not believe there was a need to describe how an operating entity operates the system as FAC-011-3 R2.3.3 and R2.4 attempt to do.

Finally, with respect to your comment that performance criteria in the Operations Horizon is no more limiting than that in the Planning Horizons, it is not the SDT’s opinion that the language proposed in R6, or any other portion of FAC-011-4 supports that position. It is our understanding that the RC is the ultimate authority for operating criteria just as the PC is the ultimate authority for planning criteria, and FAC-011 is not the mechanism by which to coordinate the two sets of criteria.

Allie Gavin - Allie Gavin On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Allie Gavin

Answer

No

Document Name

Comment

ITC agrees with MEC and believes that addressing the fundamental concept of defining SOL Exceedance needs to be done within the framework of IRO and TOP standards, where it inherently and logically belongs. We do not agree with the approach of moving that cornerstone of reliable operations from IRO/TOP set of standards to the FAC set of standards. In other words, we believe that the present context of defining what constitutes SOL exceedance and reacting to it by initiating an Operating Plan (per IRO-008-2-R2 and TOP-001-4-R14) is far better than directly exposing large number of entities to the risk of non-compliance without appropriate considerations related to physical constraints that need to be overcome during implementation of Operating Plans, in a timely manner.

The FAC standards should facilitate the creation of SOL's, not define operating criteria. SOL's should; (1) at a minimum be equal to Facility thermal or voltage limits and (2) consider system stability (voltage or transient) limits that may require limits more restrictive than Facility thermal or voltage limits.

The FAC standards should in no way infer that dynamic analysis needs to be performed as part of RTAs. Requirement R6 of FAC-011-4 as currently written could be inferred to require real time dynamic analysis. Specifically, it is unclear if requirements R6.1.3, R6.2.3, R6.3 and R6.4 require that RTA's include dynamic analysis to determine if Instability would occur or if operating to the pre-identified SOL's would provide this determination.

ITC agrees with MEC that the phrase "could be executed and completed within the specified time duration" throughout requirement R6. This could be interpreted as requiring a timing analysis before the contingency occurs to determine if ramp rates, start-up times and location and amount of load shedding are adequate. The implementation risk and compliance risk associated with this language is substantial and very concerning. Based on the language, TOP is expected to perform and document a timing analysis to determine if the adjustments could be executed within the specified time duration of Emergency Ratings each and every time when TOP performs RTA and find its facilities operating between Normal and Emergency Rating (either in real-time or on a contingency basis). It should be noted that such a timing analysis in real-time is difficult and requires significant time and resources.

Instability, as used throughout the existing standards is an undefined term which leaves room for broad interpretation. This term should be removed or defined to clarify that single unit instability would not constitute “instability” as it is used in these proposed standards.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments you have provided. The SDT received similar comments with regard to where in the standards to implement some form of SOL exceedance definition or determination. While the TOP and IRO standards may seem to be the appropriate place, the current standards have no standard which requires a uniform method be used between an RC and its TOPs when defining SOL exceedances. Furthermore, the cited existing requirements (TOP-001-4 R14 and IRO-008-2 R2) merely state merely have an operating plan to use when SOL exceedances are identified with no mention of how those SOL exceedances are determined. The SDT has however proposed modifications to IRO-008 and TOP-001 to coordinate between those two standards and FAC-011-4. The SDT believes these modifications best address the noted concerns in a balanced fashion with other comments and feedback while maintaining some amount of flexibility for the RC in the SOL methodology.

The SDT, through our three years of discussion and industry consultation, believe it is appropriate that each RC have a defined SOL exceedance determination methodology for use within its footprint. In addition, the broad outlines of what may constitute an SOL exceedance, per the proposed R6 and its sub requirements, seemed a reasonable place for each RC to use as an initial basis when developing their SOL exceedance method since the existing FAC-011-3 R2 requires the system to be “within their Facility Ratings and within their thermal, voltage and stability limits (R2.1)”.

The SDT has revised the sub requirements in R6 that deal with stability and have tried to remove that text which implies a need to perform real-time stability analysis. It is not the intent of the SDT to require any entity to perform real-time stability analysis as part of their Real Time Assessments.

In addition, the SDT has removed or changed the wording dealing with “the specified time duration” and more generally applied the appropriate limits for the condition (thermal or voltage) in question.

Finally, the SDT used the word “instability” as it is currently used in the definition for IROL as found in the NERC glossary of terms. The SDT will consider adding a clarifying phrase to limit the instability consideration to the BES.

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer	No
Document Name	
Comment	

Texas RE has concerns with the performance criteria specified in FAC-011-4 Requirement R6. As an initial matter, until FAC-014-3 Requirement R6 is read, it isn’t understood that the performance criteria in FAC-011-4 R6 is referring to SOL exceedances.

That said, Texas RE is concerned that the way the performance criteria is written, and that an SOL exceedance would not occur until the highest Emergency Rating is exceeded. Therefore, the RC and TOP may not develop an Operating Plan for exceedances of the Normal Rating identified through the OPA (TOP-002-4 and IRO-008-2), and would not be required take action to return flow to Normal Ratings when Real-time flows exceed the Normal Rating (TOP-001-4), since there is no exceedance occurring in the Parts 6.1 and 6.2 scenarios:

- FAC-011-4 Part 6.1 - Operating Plans should be created anytime the anticipated pre-Contingency state (Operational Planning Analysis) demonstrates flow above the normal Rating or voltage outside of the normal System Voltage Limits. Additionally, Operating Plans should be initiated when the actual pre-Contingency state (Real-time monitoring) identifies flows or System Voltage Limits exceeding the normal Rating.
- FAC-011-4 Part 6.2 should still require entities to create an Operating Plan that is available to System Operators if evaluation of potential single Contingencies listed in Part 5.1.1 against the anticipated pre-Contingency state (Operational Planning Analysis) indicates flow above normal Ratings. There is no way to know if System adjustments could be executed within time duration of Emergency Ratings without creating an Operating Plan to address the issue, and identifying a time-frame in which the Operating Plan could be executed. Since FAC-014-3 R6 states determination of SOL exceedances during the OPA is required to be in accordance with RC SOL Methodology, this language would not require a the creation of an Operating Plan to mitigate an exceedance of the normal Rating that is identified during the OPA.

- Real-time flows may legitimately exceed Normal Ratings as a result of conditions unanticipated by OPA, initiating the use of Emergency Ratings and their associated time limits in order to return flows to below Normal Ratings without an Operating Plan. This is the intended purpose of Emergency Ratings. It is unrealistic to assume that all operating conditions are captured by OPA, as OPA is based on preconceived contingent states.
- The same does not hold true for “anticipated pre-Contingency states” based on OPA. An anticipated pre-Contingency overload beyond the Normal Rating indicated by OPA is a base case overload which requires mitigating actions or an Operating Plan before the condition which would cause the overload occurs. Using Emergency Ratings and their associated time limits for this situation is not their intended purpose.

RCs and TOPs should be prepared when flow is outside of Normal Ratings. In order to maintain reliability, Texas RE recommends immediate action through the use of an Operating Plan to mitigate any flows or voltages outside the Normal ratings or System Voltage Limits.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT has made several edits to R6 based on industry comments. The SDT has, however, preserved the understanding identified in the SOL whitepaper that pre-contingency flow beyond a Normal Rating but below an Emergency Rating for a finite period of time less than the associated time with the Emergency Rating (e.g. 2 hours) is acceptable system performance and thus would not be required to constitute an SOL exceedance. Similarly post contingency flow beyond a Normal Rating but below an Emergency Rating for which there is reasonable time to address the exceedance before the finite period of time associated with the Emergency Rating (e.g. 2 hours) is acceptable system performance and thus would not be required to constitute and SOL exceedance. Nothing precludes an RC from applying more conservative criteria such as that as described by Texas RE’s comments, however, this standard would not require such performance criteria.

The SDT understands the comments surrounding the OPA and Operating Plans and real time conditions, however the SDT is focusing responses on the subject matter of FAC standards and not the corresponding IRO/TOP standard requirements and what constitutes an acceptable Operating Plan.

Robert Blackney - Edison International - Southern California Edison Company - 1,3,5,6 - WECC

Answer	No
Document Name	
Comment	
<p>Southern California Edison (SCE) believes that the NERC Standard Drafting Team approach of defining SOL Exceedance through a performance criteria in Requirement 6 of FAC-011-4 is inappropriate. If the Standards Drafting Team decides to include the undefined term “SOL Exceedance” within the performance criteria of FAC-011-4, the SDT effectively exposes a number of TOPs and RCs to the risk of violating FAC-011-4 (Requirement 6) if/when exceedances of system operating limits occur either in RTA or OPA. SCE believes that NERC should mitigate the regulatory uncertainty of using the undefined terminology within the performance criteria of FAC-011-4, and create a standard definition of SOL Exceedance. SCE is particularly sensitive to this issue due to Peak RC ceasing operations in 2019.</p> <p>Additionally, SCE believes NERC should create a definition for “SOL Exceedance” by using existing framework of IRO and TOP standards. SCE believes that the present context of defining what constitutes SOL exceedance and reacting to it by initiating Operating Plan (per IRO-008-2-R2 and TOP-001-4-R14) is far better than directly exposing large number of entities to the risk of non-compliance without appropriate considerations related to physical constraints that need to be overcome during implementation of Operating Plans, in a timely manner.</p> <p>Finally, SCE supports the examples presented by MidAmerican and the MRO NSRF that demonstrate the unintended consequences of using the undefined term “SOL Exceedance” within FAC-011-4 Requirement R6.</p>	
Likes	0
Dislikes	0
Response	
<p>The SDT appreciates the comments. The SDT notes your comments, however a previous attempt to create a definition for SOL exceedance received feedback that a majority of the commenters did not agree the proposed definition and that a definition was not needed. The SDT has chosen to use a similar approach to the current FAC-011-3 which specifies system performance criteria and allows the RC to define what constitutes an SOL exceedance for its RC Area so long as it meets or exceeds the system performance criteria.</p>	

Randy MacDonald - NB Power Corporation - 1

Answer	No
Document Name	
Comment	
Does planned load shedding include automatic load shedding schemes such as UVLS? Within the operational time frame UVLS should be allowed.	
Likes 0	
Dislikes 0	

Response

The SDT appreciates the comments. The SDT has included “manual” to FAC-011-4 R6.4 to clarify that automatic load shedding schemes would not be used to meet performance criteria and that load shed is a measure of last resort. The use of UVLS as a safety net and not for performance criteria or in the establishment of a stability limit is consistent with FERC commission comments in FERC Order 818.

Teresa Cantwell - Lower Colorado River Authority - 5

Answer	No
Document Name	
Comment	
In 6.1.1 and 6.1.2, use of emergency ratings and emergency voltage limits seems inappropriate during pre-contingency states. Recommend re-phrasing 6.1.3 and 6.2.3 to “a state that leads to instability, uncontrolled separation, or Cascading” in order to be more consistent with existing definitions, such as IROL and Reliable Operation, that use the terms instability, uncontrolled separation, and Cascading.	
Likes 0	
Dislikes 0	

Response

The SDT appreciates the comments. The SDT has, however, preserved the understanding identified in the SOL whitepaper that pre-contingency flow beyond a Normal Rating but below an Emergency Rating for a finite period of time less than the associated time with the Emergency Rating (e.g. 2 hours) is acceptable system performance and thus would not be required to constitute an SOL exceedance. Similarly post contingency flow beyond a Normal Rating but below an Emergency Rating for which there is reasonable time to address the exceedance before the finite period of time associated with the Emergency Rating (e.g. 2 hours) is acceptable system performance and thus would not be required to constitute and SOL exceedance. Similarly, many entities may utilize time based emergency voltage limits that allow for graduated actions to be taken based on the time exceeded. Nothing precludes an RC from applying more conservative criteria.

The SDT has chosen to include the verbiage as “instability, Cascading or uncontrolled separation that adversely impact the reliability of the Bulk Electric System do not occur” rather than tying the performance criteria to a state rather than the performance itself.

William Sanders - Lower Colorado River Authority - 1

Answer	No
Document Name	
Comment	
In 6.1.1 and 6.1.2, use of emergency ratings and emergency voltage limits seems inappropriate during pre-contingency states. Recommend re-phrasing 6.1.3 and 6.2.3 to “a state that leads to instability, uncontrolled separation, or Cascading” in order to be more consistent with existing definitions, such as IROL and Reliable Operation, that use the terms instability, uncontrolled separation, and Cascading.	
Likes	0
Dislikes	0

Response

The SDT appreciates the comments. The SDT has, however, preserved the understanding identified in the SOL whitepaper that pre-contingency flow beyond a Normal Rating but below an Emergency Rating for a finite period of time less than the associated time with the Emergency Rating (e.g. 2 hours) is acceptable system performance and thus would not be required to constitute an SOL exceedance. Similarly post contingency flow beyond a Normal Rating but below an Emergency Rating for which there is reasonable time to address the exceedance before the finite period of time associated with the Emergency Rating (e.g. 2 hours) is acceptable system performance and thus would not be

required to constitute and SOL exceedance. Similarly, many entities may utilize time based emergency voltage limits that allow for graduated actions to be taken based on the time exceeded. Nothing precludes an RC from applying more conservative criteria.

The SDT has chosen to include the verbiage as “instability, Cascading or uncontrolled separation that adversely impact the reliability of the Bulk Electric System do not occur” rather than tying the performance criteria to a state rather than the performance itself.

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

Answer	Yes
---------------	-----

Document Name	
----------------------	--

Comment

On behalf of our City Light SME: The criteria seems appropriate and in line with TPL criteria.

Likes	0
-------	---

Dislikes	0
----------	---

Response

The SDT appreciates the comments.

Leonard Kula - Independent Electricity System Operator - 2

Answer	Yes
---------------	-----

Document Name	
----------------------	--

Comment

We are in general agreement over the proposed changes as they essentially maintain the system performance criteria, similar to the approach in the currently effective FAC standards. Our main comments are:

- The proposed standards should require the Reliability Coordinator’s (RC) methodology to establish stability limits when those limits also impact other RC Areas, and that the criteria for the selection of contingency events is defined and applied consistently in all the RC areas, in order to ensure that all IROLs within a defined scope are detected and properly studied.
- Throughout the standard development process for the revisions of the IRO/TOP standards the IESO continued to comment on our serious concern over the proposed retirement of Requirement R4 of TOP-004-2 without having it reinstated in TOP-001-3 or having some of the requirements in TOP-001-3 revised to addressing the reliability need for confirming or reestablishing valid SOLs/IROLs in an unknown or unstudied state. We recognized that by virtue of the proposed definition of Operational Planning Analysis (OPA) and Real-time Assessment (RTA), as well as the new requirement for TOPs to update their OPA results through the performance of a RTA every 30 minutes, that the entities will always be assessing the reliability of the BES. However, this falls short of requiring an entity to determine new/revised limits to begin with. Without knowing the boundaries, performing real-time analysis every 30 minutes does not give the entity an indication if current operations (power flow or voltage levels) exceed the limits that are valid and applicable for the present conditions. These conditions pose unacceptable risks of instability since the operator does not know whether the next contingency will result in system instability.

We recognize that this issue is not within the scope of this project, but is directly related through the methodology that will be used to determine operating limits for these unknown states. In order to better coordinate the development of standards, we recommend that the scope of future NERC projects should better identify relationships between families of standards at the onset, and encourage potential revisions to related requirements.

Likes 0

Dislikes 0

Response

Response

The SDT appreciates the comments. The SDT has added to FAC-011-4 R4.3 the phrase “or other Reliability Coordinator Areas.” The SDT recognizes the comments surrounding the retirement of TOP-004-2 R4, however the SDT is focusing responses on the subject matter of FAC standards and not the corresponding IRO/TOP standard requirements and would direct the commenters to previous responses to similar

comments issues as part of that Project 2014-03 SDT as those comments attempted to address the concerns noted. The SDT reaffirms its scope to focus on the SOL methodology and subsequent required content and performance criteria contained within.

Answer Yes

Document Name

Comment

GTC agrees with the SDT’s proposal and has one suggested wording modification the Requirement R6, Part 6.2.1.

6.2.1. Flow through Facilities are within applicable Emergency Ratings, provided

that System adjustments could be executed and completed within the specified time duration of those Emergency Ratings. Flow through a Facility must not be above the Facility’s highest applicable Emergency Rating.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT modified 6.2.1 to address other comments as well and now reads, “Steady state post-Contingency flow through Facilities within applicable Emergency Ratings. Steady state post-Contingency flow through a Facility must not be above the Facility’s highest Emergency Rating.” The use of “applicable” was not chosen as “highest” was intentionally chosen to mean the highest Emergency Rating and is consistent with the SOL whitepaper.

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no Dominion, Con Ed and NBPower

Answer Yes

Document Name

Comment

We are in general agreement over the proposed changes as they essentially maintain the system performance criteria, similar to the approach in the currently effective FAC standards. Our main comments are:

- The proposed standards should require the Reliability Coordinator’s (RC) methodology to establish stability limits when those limits also impact other RC Areas, and that the criteria for the selection of contingency events is defined and applied consistently in all the RC areas, in order to ensure that all IROLs within a defined scope are detected and properly studied.

- Throughout the standard development process for the revisions of the IRO/TOP standards the IESO continued to comment on our serious concern over the proposed retirement of Requirement R4 of TOP-004-2 without having it reinstated in TOP-001-3 or having some of the requirements in TOP-001-3 revised to addressing the reliability need for confirming or reestablishing valid SOLs/IROLs in an unknown or unstudied state. We recognized that by virtue of the proposed definition of Operational Planning Analysis (OPA) and Real-time Assessment (RTA), as well as the new requirement for TOPs to update their OPA results through the performance of an RTA every 30 minutes, that the entities will always be assessing the reliability of the BES. However, this falls short of requiring an entity to determine new/revised limits to begin with. Without knowing the boundaries, performing real-time analysis every 30 minutes does not give the entity an indication if current operations (power flow or voltage levels) exceed the limits that are valid and applicable for the present conditions. These conditions pose unacceptable risks of instability since the operator does not know whether the next contingency will result in system instability.

We recognize that this issue is not within the scope of this project, but is directly related through the methodology that will be used to determine operating limits for these unknown states. In order to better coordinate the development of standards, we recommend that the scope of future NERC projects should better identify relationships between families of standards at the onset, and encourage potential revisions to related requirements.

Likes	0
Dislikes	0

Dislikes	0
----------	---

Response

The SDT appreciates the comments. The SDT has added to FAC-011-4 R4.3 the phrase “or other Reliability Coordinator Areas.” The SDT recognizes the comments surrounding the retirement of TOP-004-2 R4, however the SDT is focusing responses on the subject matter of FAC standards and not the corresponding IRO/TOP standard requirements and would direct the commenters to previous responses to similar comments issues as part of that Project 2014-03 SDT as those comments attempted to address the concerns noted. The SDT reaffirms its scope to focus on the SOL methodology and subsequent required content and performance criteria contained within.

Jack Stamper - Clark Public Utilities - 3

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Scott Downey - Peak Reliability - 1

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes	0
Response	
Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF, Group Name PPL NERC Registered Affiliates	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Preston Walker - PJM Interconnection, L.L.C. - 2 - SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Chris Wagner - Santee Cooper - 1, Group Name Santee Cooper	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response

Kathleen Goodman - Kathleen Goodman On Behalf of: Michael Puscas, ISO New England, Inc., 2; - ISO New England, Inc. - 2 - NPCC

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Quintin Lee - Eversource Energy - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Brandon Gleason - Electric Reliability Council of Texas, Inc. - 2

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Michael Godbout - Hydro-Quebec TransEnergie - 1 - NPCC

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Eric Shaw - Eric Shaw On Behalf of: Lee Maurer, Oncor Electric Delivery, 1; - Eric Shaw	
Answer	
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	

2. If you have any other comments regarding FAC-011-4 that you haven't already provided, please provide them here.

Michael Godbout - Hydro-Qu?bec TransEnergie - 1 - NPCC

Answer

Document Name

Comment

We support the FAC revisions.

We have the following comments:

Subrequirements R7.1 and R 7.2

We agree with comments submitted by the NPCC RSC in regards to requirements 7.1 and 7.2. The subrequirements R7.1 and R7.2 require the identification of SOL that are IROL and the criteria for identifying SOL violations that are IROL. We do not understand the difference and our compliance department do not see how the evidence of those two subrequirements would be distinct.

Requirement R5.1

We have a minor comment regarding the addition in R5.1 of "Specify the" makes the use in 5.1.1 of "any" more ambiguous than it is in the current version. Consider that R5 now requires

- a) identify in its SOL methodology...
- b) Specify the following single contingency event...
- c) Loss of "any" of the following.

Before it clearly “included” the following “list” of single contingency events. It would be better for the language to clearly state in 5.1.1. “Loss of each of the following” or return to language that clearly mandates the inclusion of the loss of all the listed elements.

Requirement 9

Also, the last sentence of the Rationale for Requirement R9 for FAC-011-4 should be modified as follows. “(...) mandates provision of the SOL Methodology to non-adjacent RCs [or to adjacent RCs in another Interconnection] that have specifically requested (...)”

Likes	0
-------	---

Dislikes	0
----------	---

Response

Thank you for your comments. With regard to your query on subrequirements R7.1 and R7.2, those exist in today’s FAC-011-3 as R1.3 and R3.7. They have been included, unchanged, from the existing FAC-011-3 other than being relocated to single common standard (R7). If you wish to propose a revision, perhaps joining the two subrequirements (maybe something like “A description of how to identify the subset of SOLs that qualify as Interconnection Reliability Operating Limits (IROLs), including the criteria for determining when violating a SOL qualifies as an IROL and criteria for developing any associated IROL Tv.”), please do so.

Regarding your question on R5.1 and R5.1.1, the drafting team made the revisions as shown to provide the flexibility for contingency lists created for stability analysis to not have to examine every single facility contingency when engineering judgement would allow the contingency list to be distilled down to the likely most limiting. Real time steady state analysis could and should use a contingency list that includes most of the single element contingencies, but even that list could exclude a subset of contingencies that could not be most limiting, for example loss of a small load serving transformer or a small generator.

Finally, with regard to requirement 9, we included subrequirement 9.1 so that any RC could request an RC’s SOL methodology and subrequirement 9.2.4, which allows any RC to request another RC’s SOL methodology, should there be a reliability based need, before it becomes effective. These two subrequirements should allow adjacent RCs in another interconnection to request the appropriate SOL methodology of their choice.

Eric Shaw - Eric Shaw On Behalf of: Lee Maurer, Oncor Electric Delivery, 1; - Eric Shaw

Answer	
--------	--

Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	
Teresa Cantwell - Lower Colorado River Authority - 5	
Answer	
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	
Robert Blackney - Edison International - Southern California Edison Company - 1,3,5,6 - WECC	
Answer	
Document Name	
Comment	

SCE concurs with MidAmerican’s additional comments regarding FAC-011-4.	
Likes	0
Dislikes	0
Response	
See response to MidAmerican.	
Randy MacDonald - NB Power Corporation - 1	
Answer	
Document Name	
Comment	
Regarding R3.3 What is the purpose of this subrequirement? The methodology should not prevent or limit the use of undervoltage load shedding by the Reliability Coordinator in the operational time frame. Suggest changing the wording to allow for undervoltage load shedding within the operational time frame as long at the reliability coordinator is aware. The methodology could have the requirement that the use of UVLS requires RC approval.	
Likes	0
Dislikes	0
Response	
We appreciate your comment. This subrequirement (R3.3) was derived after much drafting team and observer discussion. The consensus was that while under-voltage load shedding (UVLS) schemes can be useful, they should not be the premise upon which acceptable system performance is solely based. When there are other operating actions which can be taken, such as dispatch of generation, those actions should be taken, while the under-voltage load shedding schemes can act to mitigate unexpected poor system performance should it occur. As an example, if the lowest acceptable post-contingent voltage was 90% of nominal, the UVLS scheme could have an actuation voltage setting of 89% of nominal.	
Brandon Gleason - Electric Reliability Council of Texas, Inc. - 2	

Answer	
Document Name	
Comment	
<p>Numbering typos exist in Measure Nos. M7, M8, and M9. Requirement Nos. R7, R8, and R9 should be referenced accordingly.</p> <p>Revised language in Requirement R1 is not included in the Violation Security Levels table. Specifically, the term “documented” was added to Requirement R1. ERCOT suggests including the term in the Violation Severity Levels table order to be consistent.</p> <p>Similarly, the revised language in Requirement R2 is not included in the Violation Security Levels table. Specifically, “the applicable” was replaced with “which” and “are” in Requirement R2. ERCOT suggests including the same revisions in the Violation Severity Levels table.</p> <p>In requirement R9, “and any changes to the SOL Methodology prior to the effective date of the SOL Methodology” was deleted. ERCOT suggests aligning the Violation Severity Levels table to align with this revision and the specific language of the applicable requirements. For Part 9.1, there is no distinction between “new or revised” in the wording of the requirement, but it is explicitly stated in the Violation Severity Levels table.</p> <p>ERCOT suggests capitalizing “methodology” in Requirement R9, Part 9.2.</p>	
Likes 0	
Dislikes 0	
Response	

Thank you for your comments. We will review the language in measures 7, 8 and 9 and revise accordingly. Similarly, we appreciate your comments on the Violation Security Levels table and will make the appropriate editorial changes.

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Document Name

Comment

Texas RE noticed FAC-011-4 Part 3.3 uses the term “under voltage” while the NERC Glossary and other Standards use the term “undervoltage”.

Likes 0

Dislikes 0

Response

Thank you for your comment. We will include the appropriate term in the version posted for ballot.

Allie Gavin - Allie Gavin On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Allie Gavin

Answer

Document Name

Comment

Requirement R2 specifically states that the RC “shall include in its SOL Methodology the method for Transmission Operators to determine which owner-provided Facility Ratings are to be used in operations”. This requirement needs to be bounded such that the RC is not specifying in its methodology how a Transmission Operator and thus a Transmission Owner is required to rate its transmission facilities, up to and including the use of real time ratings. This would determine the amount of risk a Transmission Owner is subject to for its facilities. The standard should only specify the end objective and not the process to achieve that objective.

Requirement R8 is redundant with IRO-010-2 R1. SOLs are inputs to OPA and RTAs. As such, R1 of IRO-010-2 already requires the RC to maintain a documented specification of the data necessary for it to perform its Operational Planning Analyses, Real-time monitoring and Real-time Assessments. This requirement included requirements for periodicity of providing the data. As such, R8 of proposed FAC-011-4 is redundant and should be deleted from the proposed standard.

Likes 0

Dislikes 0

Response

Thank you for your comment. The language in requirement R2 was chosen to allow the RC to describe how it wishes the TOP to use the facility-owners ratings to meet the rating needs of the RC. The RC is allowed to determine what it needs for rating information to function. By doing so, the RC does not dictate to either the facility owner now TOP what ratings need to be provided. For example, the RC may state it wants a normal rating and a 1 hour emergency rating. Per requirement R2, the RC may instruct the TOPS, through its SOL methodology, that it wishes to have its rating set filled with the rating whose time duration most closely approximates the desired duration of the RC's rating, with the rating chosen always having a time duration at least equaling that of the RC's rating. Therefore, if the facility owner provided ratings for 24 hour, 2 hour and 30 minutes, the TOP would use the 24 hour rating for the normal rating and the 2 hour rating to meet the RC's 1 hour rating. This example illustrates how the RC describing how the facility ratings may be used to meet the RC's rating needs does not determine how the facility owner rates equipment.

Brandon McCormick - Brandon McCormick On Behalf of: Carol Chinn, Florida Municipal Power Agency, 6, 4, 3, 5; Chris Gowder, Florida Municipal Power Agency, 6, 4, 3, 5; David Owens, Gainesville Regional Utilities, 3, 1, 5; Don Cuevas, Beaches Energy Services, 1, 3; Ginny Beigel, City of Vero Beach, 3; Joe McKinney, Florida Municipal Power Agency, 6, 4, 3, 5; Ken Simmons, Gainesville Regional Utilities, 3, 1, 5; Neville Bowen, Ocala Utility Services, 3; Randy Hahn, Ocala Utility Services, 3; Richard Montgomery, Florida Municipal Power Agency, 6, 4, 3, 5; Steven Lancaster, Beaches Energy Services, 1, 3; Tom Reedy, Florida Municipal Power Pool, 6; - Brandon McCormick, Group Name FMPA

Answer

Document Name

Comment

FMPA is concerned that Project 2015-09 does not consider the work done by the MEITF (Methods for Establishing IROls Task Force). There are defined terms used in R6 that the MEITF has proposed changes to, and that have been endorsed by the NERC PC and OC. FMPA asks that the implementation plan be changed so that FAC-011-4 would only be effective once the new definitions proposed by the MEITF become effective

Likes 0

Dislikes 0

Response

We thank you for the comment. The drafting team, in consultation with NERC, have decided that the work, and terms, defined by the MEITF, as well as the IROL topic, can wait while the FAC standards that are within scope of the drafting team are resolved. It is the opinion of the SDT and NERC that the terms defined by the MEITF are not needed to revise FAC-011.

Douglas Johnson - American Transmission Company, LLC - 1

Answer

Document Name

Comment

ATC does have other comments on FAC-011-4:

- Requirement R3 addresses the establishment of a voltage-based SOL at each bus. No similar requirement is given for thermal ratings. It is unclear if the SDT expects each Facility to have a thermal-based SOL. Alternatively, can TOPs and RCs use multi-element or proxy flowgates to manage power flow on the system? The expectation regarding thermal related SOLs needs to be clearly stated in any requirement such that entities can fulfill the requirements and all entities are operating the BES from the same understanding.
- R3.3 should be improved by clarifying what undervoltage load shedding (UVLS) systems are in view (i.e. owned by the Transmission Owner, the Distribution Provider, end-use customer). It would seem that R3.3 should not be limited by UVLS relay settings implemented by a distribution utility or an end-use customer. A suggested edit is to clarify these are BES systems as follows: *"in-service BES relay settings for undervoltage load shedding..."*.

- Similar to comments provided in question #1 related to R6.5, Requirement R4.7 should be modified to remove the restriction on using UVLS Programs when setting stability limits. It is generally accurate to state that UFLS should not be relied upon to maintain stability, although the SDT needs to recognize that UFLS may be a necessary component to maintain stability of a portion of a system deliberately islanded by a Remedial Action Scheme. As such, R4.7 should be modified to read, *"State that the use of underfrequency load shedding (UFLS) programs are not allowed in the establishment of stability limits except in specific, documented circumstances (e.g., Remedial Action Schemes)."*

Likes 0

Dislikes 0

Response

Thank you for your comments. The wording of requirement R2 in FAC-011-4 is such that the RC is setting a method for adoption of ratings for all elements for which the facility-owner provides thermal ratings. This is done with the expectation that the RC models and uses thermal ratings for each system element with a rating provided. With that said, there is no preclusion that prevents the TOP or RC using a multi-element or proxy flow gate to assist in maintaining reliability, as long as the provided ratings are used also, and respected in at least their Real-time monitoring, Real-time Assessments, and Operational Planning Analyses.

With respect to your comment on subrequirement R3.3, we have adopted your language suggestion.

Finally, with respect to your comment on using UVLS and UFLS on setting stability ratings, the SDT discussed both at length. With regard to UVLS, and the setting of traditional stability limits, such as those recognizing angular stability, shedding load via UVLS will not improve stability but instead will either do nothing or exacerbate the concern, so UVLS is not a solution to unit/ angular stability nor transient voltage recovery. The preclusion for using UFLS has to do with maintaining stability on the interconnected BES and not disconnected islands, so the standards as proposed do not apply to individual islands created as a consequence of system events, and as such, do not speak to UFLS use within those created islands.

Amy Casuscelli - Amy Casuscelli On Behalf of: Michael Ibold, Xcel Energy, Inc., 3, 1, 5; - Amy Casuscelli

Answer	
Document Name	
Comment	
<p>R3.3 Require that System Voltage Limits are higher greater than or equal to in service relay settings for under voltage load shedding (UVLS) relay settings systems and Undervoltage Load Shedding Programs</p> <p>R3.3 should be improved by clarifying what under voltage load shedding systems are in view (i.e. owned by the Transmission Owner, the Distribution Provider, end-use customer). It would seem that R3.3 should not be limited by under voltage load shedding relay settings implemented by a distribution utility or an end-use customer</p>	
Likes 0	
Dislikes 0	
Response	
<p>Thank you for your comment. Requirement R3.3 was written with the thought that System Voltage Limits will not be changed, but instead the settings should be reviewed and changed to not be in conflict with the System Voltage Limits.</p>	
<p>Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no Dominion, Con Ed and NBPower</p>	
Answer	
Document Name	
Comment	
<p>We offer the following specific comments:</p> <p>Sub-Requirement R4.1.3:</p>	

It is not clear what is meant by “unit” stability. We suggest reverting back to using the current term “angular” stability as it is a term well understood by the industry.

Sub-Requirement R4.3:

A main concern is the lack of criteria to define contingencies for the establishment of IROLs. Today, some RCs respect single contingencies, while other respect double contingencies. Given the impact on the Interconnection, it is crucial that criteria for the selection of contingency events is defined and applied consistently in all the RC areas, in order to ensure that all IROLs within a defined scope are detected and properly studied. We recommend that the following wording is added to Sub-Requirement R4.3 to establish SOLs that impact on the Interconnection:

“Describe how the Reliability Coordinator establishes stability limits when there is an impact to more than one Transmission Operator in its Reliability Coordinator Area or other Reliability Coordinator Areas in accordance with its SOL Methodology.”

Sub-Requirements R5.2 and R5.3

Sub-Requirements R5.2 and R5.3 require the RC to identify any additional single or multiple Contingency events. We believe that specifying, at a minimum, which contingencies must be respected (similar to Sub-Requirement R5.1.1. for single Contingencies) would improve reliability. In particular, to the extent there is an alignment in respecting the same set of contingencies and performance criteria for IROLs.

Furthermore, the loss of small or radial portions of the system should be acceptable provided the performance requirements are not violated for the remaining bulk power system.

Sub-Requirement R6.2.2

Sub-Requirement R6.2.2 should include the same wording as sub-requirement 6.1.2:

“Voltages are within normal System Voltage Limits; however, emergency System Voltage Limits may be used when System adjustments to return the voltage within its normal System Voltage Limits could be executed and completed within the specified time duration of those emergency System Voltage Limits.”

Sub-Requirements R6.3 and R6.4

For consistency purposes, we recommend that Sub-Requirements R6.3 and R6.4 also require to demonstrate that flow through Facilities are within Normal Ratings, similar to Sub-Requirements 6.1.1 and 6.2.1:

“Flow through Facilities are within Normal Ratings; however, Emergency Ratings may be used when System adjustments to return the flow within its Normal Rating could be executed and completed within the specified time duration of those Emergency Ratings.”

Sub-Requirements R7.1 and 7.2

Sub-requirements R7.1 and R7.2 require to describe how to identify IROLs, and to identify the criteria for IROLs which is basically the same thing. We recommend merging these sub-requirements into one:

7.1. A description of the criteria to identify the subset of SOLs that qualify as Interconnection Reliability Operating Limits (IROLs) and for developing any associated IROL Tv.

R3

Sub-Requirement 3.5 combines two requirements, (1) require a method for determining... and (2) require common use. Sub-Requirement 3.5 should be re-written as “require a method for determining...” as shown below.

We assume that 3.6 and 3.7 intend to “address coordination” within the “method for determining” the limit. As such, that consideration should be rolled into the requirement for “a method for determining..”

Since System Voltage Limits are SOLs, it is unnecessary to explicitly require the operation within the restrictions of System Voltage Limits. Also it is inappropriate to place any system operation requirement (Require the use...) within an operating parameter development methodology. There are already requirements for the system to always be studied and operated within the SOL restrictions of the local reliability entity as well as the SOL of adjacent reliability entities. All requirements for “require the use of common” should be deleted.

3.5 Provide the method for determining the common System Voltage Limits in coordination with adjacent Reliability Coordinators and Transmission Operators.

R4

What is the point of R4.2? If R5 requires that all stability analysis to evaluate the contingencies listed in “5.1. Specify the following single Contingency events for use in determining stability limits and performing OPAs and RTAs.” How can one violate 5 without also violating 4.2? Is this not double jeopardy? The identical requirements are applied to both general SOL stability analysis and OPA/RTA stability analysis. R4.2 is a requirement to comply with R5.1.

Sub requirements 5.3 and 5.4 are double jeopardy and should be deleted. How can there be any contingencies used “determining the stability limits to be used in operations” that are not completely identical to the contingencies used in “determining stability limits and performing OPAs and RTAs.” It is impossible to violate 5.3 or 5.4 without simultaneously violating 5.2

We suggest the SDT Re-write 4.2 determining the stability limits to be used in operations as follows and eliminate R5 its entirety.

4.2 Specify the following single Contingency events for use in determining stability limits

4.2.1. Loss of any of the following either by single phase to ground or three phase Fault (whichever is more severe) with Normal Clearing, or without a Fault:

- generator;
- transmission circuit;
- transformer;
- shunt device; or
- Single pole block, with Normal Clearing, in a monopole or bipolar high voltage direct current system.

4.2.2. Identify any additional single or multiple Contingency events or types of Contingency events for use in performing Operational Planning Analysis and Real-time Assessments.

R5

What is the point of R5.2? If 5.2 requires that all stability analysis to evaluate the contingencies listed in “5.1. Specify the following single Contingency events for use in determining stability limits and performing OPAs and RTAs.” How can one violate 5.1 without also violating 4.2? Is this not double jeopardy? The identical requirements are applied to both general SOL stability analysis and OPA/RTA stability analysis. R4.2 is a requirement to comply with R5.1.

Sub requirements 5.3 and 5. 4 are double jeopardy and should be deleted. It is impossible to violate 5.3 or 5.4 without simultaneously violating 5.2

Re-write 4.2 as follows and eliminate R5 its entirety.

4.2 Specify the following single Contingency events for use in determining stability limits

4.2.1. Loss of any of the following either by single phase to ground or three phase Fault (whichever is more severe) with Normal Clearing, or without a Fault:

- • generator;
- • transmission circuit;
- • transformer;
- • shunt device; or
- • Single pole block, with Normal Clearing, in a monopole or bipolar high voltage direct current system.

4.2.2. Identify any additional single or multiple Contingency events or types of Contingency events for use in performing Operational Planning Analysis and Real-time Assessments.

Likes	0
Dislikes	0

Response

Thank you for your comments. We accepted your change and now use “angular” stability.

With regard to your comment on subrequirement R4.3, the parent requirement, R4, states that the “Reliability Coordinator shall include in its SOL methodology the method for determining the stability limits to be used in operations. The method shall: . . . ” which already makes subrequirement R4.3 subject to the RC’s SOL methodology. We believe the suggested text addition is not necessary in R4.3.

With respect to your suggested additions to subrequirements R5.2 and R5.3, while the topic was discussed, there was not enough consensus on the topic to include your suggested in the requirements.

With respect to your suggested revision for subrequirement R6.2.2, the SDT did not think it appropriate to suggest post-contingent voltages need to be within normal System Voltage Limits. The SDT agreed that emergency System Voltage Limits are appropriate for use in the post-contingent state. The SDT further recognized that emergency System Voltage Limits make take on a variety of forms, with varying potential time applicability, and as such, thought the each TOP / RC would use their emergency System Voltage Limits appropriately as they transitioned the system to a new pre-contingent state to prepare for the next contingency without the need for further language in the standard.

The SDT discussed at length new subrequirements R6.3 and R6.4, including which reliability criteria should be applicable. The SDT could only agree that any contingencies included in the RC’s contingency list per subrequirement R5.2 should only have to demonstrate the performance described in subrequirement R6.3. RCs are not precluded from having more prescriptive criteria for any contingency they specify per subrequirement R5.2. In addition, subrequirement R6.2.1 already establishes appropriate thermal performance in the post-contingent state and is not required to be restated in subrequirement R6.4.

The SDT has accepted your suggestion of combining subrequirements R7.1 and R7.2 into a single requirement.

The SDT has revised subrequirement R3.5 to only defining the method to be used to determine voltage limits for the conditions described. Subrequirements R3.5, R3.6 and R3.7 have been combined into a single subrequirement (R3.5). The SDT retained the concept of defining the method for determining common System Voltage Limits found in the old and new subrequirements due to multiple participants in the drafting process noting it as a real operating concern. There is nothing in the subrequirement that mandates the establishment of common System Voltage Limits, and whatever System Voltage Limits results, the most limiting will be respected in operating the system.

Subrequirement R4.2 was established due to numerous comments by industry and members of the SDT. The subrequirement allows an RC or TOP to use those contingencies that produce the more Severe system impacts when establishing stability limits. Commenters correctly pointed out that without such a subrequirement, all contingencies would have to be tested to establish contingency limits, including those that had no reasonable likelihood of setting a stability limit. Subrequirement R5.1 establishes the minimum contingency list, and subrequirement defines the subset of those contingencies that may be tested to establish stability limits.

Subrequirement R5.3 has been removed. Subrequirement has been changed to conform with removing FAC-015 and including a new requirement R7 in FAC-014. The SDT does not believe the revised subrequirement R5.3 is “double jeopardy” in any way; instead, the subrequirement is included so that contingencies identified in annual planning assessments causing stability issues can be evaluated to see if any additional contingencies should be respected in operating the system based upon the supplied information. The subrequirement does not require inclusion of additional contingencies. The subrequirement is based upon information already required for provision in FAC-014-2, subrequirements R6.1 and R6.2.

Laura McLeod - NB Power Corporation - 5

Answer

Document Name

Comment

Do not agree with R3.3, too restrictive. Should be allowed to have UVLS relays set higher than SOL voltage limits.

Likes 0

Dislikes 0

Response

The SDT appreciates your comment. Your perspective was discussed at length by the SDT with regard to this subrequirement. That discussion, and resulting comments from observers and drafting team members recognized that allowing UVLS relays to actuate above System Voltage Limits would potentially allow a TOP to not take all appropriate actions to remain within System Voltage Limits, which was not believed to be appropriate when operating the system. That is the reason why this subrequirement was written with this choice of language.

Terry Bilke - Midcontinent ISO, Inc. - 2

Answer

Document Name

Comment

R5.1.1 includes all generators and all shunt devices. There is minimal benefit to attempting to study the impact of the unavailability of every shunt device on the transmission system. Defining some criteria on which shunt devices will be studied would be ideal, to avoid creating an unnecessarily burdensome requirement for studies being performed.

RCs should specify their criteria for including these, recognizing the size and potential impact of individual elements, the design of system protection, and the needs of their area.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT revised requirement R5 to state that “Each Reliability Coordinator shall identify in its SOL methodology the set of Contingency events for use in determining stability limits and the set of Contingency events for use in performing Operational Planning Analysis (OPAs) and Real-time Assessments (RTAs).” These sets of Contingency events, while based upon the contingency events listed in subrequirements R5.1.1, R5.2 and R5.3, may be adjusted to account for concerns such as the one you describe.

Douglas Webb - Douglas Webb On Behalf of: Allen Klassen, Westar Energy, 6, 3, 1, 5; Bryan Taggart, Westar Energy, 6, 3, 1, 5; Derek Brown, Westar Energy, 6, 3, 1, 5; Grant Wilkerson, Westar Energy, 6, 3, 1, 5; Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; Jennifer Flandermeyer, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; John Carlson, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; - Douglas Webb

Answer

Document Name

Comment

Recommendation: Replace “Instability” with “System instability”

Proposed FAC-011-4. The companies suggest replacing “instability” with “System instability” to provide context and boundaries to the proposed Requirements.

The companies recognize the word “instability” is used without a modifier in the NERC Reliability Standards and Glossary Terms but equally so, it is used with a modifier to provide a boundary to the word. For example:

- Glossary Term: ULVS Shedding Program, “...leading to voltage instability, voltage collapse...”
- Glossary Term: Adverse Reliability Impact, “...an event that results in frequency-related instability...”
- TPL-001-4 R6, “...system instability...voltage instability...”
- PRC-012-2 R4.1.3, “...angular instability, voltage instability...”
- PRC-024-2 R1, “...instability in power conversion...”

Significant Administrative Burden. The effect of using “instability” without a modifier will require entities to report every single instance of “instability” developed from a significant number of contingency events identified during the annual Planning Assessments, including unit instability under TPL-001-4.

Recommendation 1

Replace “instability” with “System instability” throughout the proposed FAC-011-4 revision. “System instability” is already used in TPL-001-4. Replacing the term provides an effective parameter to reporting by requiring reporting of coordinated instances of instability that necessitate a Correction Action Plan and, in turn, relieve entities of a time-consuming and overly-burdensome reporting requirement.

Recommendation 2

Requirements 6.1.3 and 6.2.3

The companies suggest 30-minute time thresholds, T_v , be added to the proposed revisions to FAC-011-4 R6.1.3 and R6.2.3. This provides RCs / TOPs a time certain threshold to correct exceedance for determinations of compliance.

R6.1.3 and R6.2.3 refer to preventing instability, cascading or uncontrolled separation.

- The present definition of IROL Violation has a T_v time threshold (< 30 minutes) before it becomes a compliance issue.
- The proposed language does not recognize time-frames associated with exceedances of established stability limits.
- Effect: Without a time-frame, it is conceivable a system could experience a significant number of exceedances that possibly last less than 1-minute with a magnitude less than 1%. In such a case, to report would be an onerous compliance burden.

To mitigate potentially over burdensome reporting of a significant number of *di minimis* exceedances, the companies recommend establishing a parameter by requiring reporting of only coordinated instances of instability that necessitate a Correction Action Plan.

Likes 0

Dislikes 0

Response

Thank you for your comments. The SDT, over its existence, has discussed the very edit you suggest – changing “instability” to “system instability”. Since this suggested edit is linked to the topic of IROs, and this topic did not lend itself to resolution in this phase of the SDT’s efforts, the SDT, as suggested by NERC, is deferring the suggested wording change until the topic of IROs is dealt with after the SDT revises the FAC standards within the scope of its SAR. Your suggested wording revision will be seriously considered in the next phase of the SDT’s work.

The SDT did not include any defined T_v within requirement R6 and its subrequirements. Based upon comments from industry, the SDT revised FAC-011 and FAC-014 and left to the TOP and IRO standards the determination of SOL exceedances using the framework established with requirement R6. Instead, the SDT added a new requirement R7 that required inclusion in the SOL methodology “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur.” This addition provides structure around existing TOP and IRO standards which require communication of SOL exceedance information between RCs and TOPs and allows the RC to determine a single method for communication

of SOL exceedances, with a defined timeframes. The new requirement R7 establishes minimum requirements for set of SOL exceedances in regards to communication, but leaves the remaining details to be determined by the RC.

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

Answer

Document Name

Comment

The SPP Standards Review Group (SSRG) recommends that the drafting team consider IROLs in Phase 2 of this project. As discussed at the September 2018 Planning Committee (PC) Meeting, although this project includes IROLs, the drafting team’s feedback to the PC was to focus on only the SOL for this commenting period (Phase I). During Phase II, the drafting team will put more focus on the IROL. This is a reasonable suggestion given that all relevant materials pertaining to the IROL were approved at that most recent meeting and couldn’t be implemented in the Phase I comment period.

Likes 0

Dislikes 0

Response

The SDT appreciates your comments and agrees with suggestion. The IROL topic will wait until after these FAC standards are revised.

Kevin Salsbury - Berkshire Hathaway - NV Energy - 5

Answer

Document Name

Comment

NV Energy understands and supports the SDT’s efforts to come up with the broad industry consensus with regard to definition of SOL and associated definition of SOL Exceedance. However, we believe that addressing a fundamental concept of SOL Exceedance definition needs to be done within the framework of IRO and TOP standards, where it inherently and logically belongs. Due to reasons that we outlined in response to the question 1 (see above) we find it inappropriate to incorporate the definition of SOL Exceedance as a performance criteria in

Requirement 6 of FAC-011-4 Standard and significantly worse and more risky in comparison with coming up with definition of SOL Exceedance.

NV Energy shares the industry concern that the proposed changes to Standards FAC-011-4 and FAC-014-3 would cause the following unintended consequences and repercussion:

- If approved, new versions of the NERC Standards FAC-011-4 and FAC-014-3 **would expose a large number of TOPs and RC to the SIGNIFICANTLY increased compliance risk (direct violation of the FAC-014 R6 in conjunction with FAC-011-4 R6) unless enormous resources and efforts are added within each TOP's/RC's organization.**
- **If the interpretation is correct that TOP/RC would not violate FAC standards in case of exceeding performance criteria as long as they implement their Operating Plan (per TOP-001 R14), our above mentioned concern transforms into another concern about huge administrative, compliance related, burden. Namely, TOP/RC would have to have (as evidence of compliance), logging and recording documentation that it implemented its Operating Plan in response to each and every instance when projected post-contingent flow on RTCA exceeds highest emergency rating, even for short time period (such as several minutes).**
- Therefore, due to the absence of time-frame considerations for exceedances of projected post-contingent flows or voltages, the new versions of the NERC Standards FAC-011-4 and FAC-014-3 would cause frequent SOL exceedances (and therefore frequent violations of the new FAC-011 performance criteria) and prohibitively costly and time consuming administrative burden.
- **This definition may decrease reliability as opposed to the SDT's intention of increasing reliability, because of the overwhelming pressure on transmission operators and reliability coordinators to record and communicate frequent SOL exceedances as opposed of being focused on monitoring and implementing control actions to maintain system reliability in real-time.**

- We believe the definition would **delay implementation of the Operating Plan in real-time** due to logging and documentation requirements, as this functionality is not a built-in feature of many SCADA systems in use today.
- We believe that another unintended outcome would be operation **in an unnecessarily conservative state, as TOP would have to operate with higher reliability margin from the highest emergency rating, to ensure that following a forced outage or other system disturbance, that the next execution of real-time contingency analysis would not show any facility beyond its highest emergency thermal rating or emergency voltage rating**
- **The proposed standards would significantly constrain the business in the industry** as conservative limits would **not allow for many of scheduled outages to proceed** without risk of SOL exceedance/performance criteria violation.

We re-iterate our ***recommendation that SDT re-considers adoption of the performance criteria/SOL exceedance per above mentioned suggestions.*** We believe that these modifications would provide the following benefits:

- They are *more realistic in recognizing reality of existing transmission infrastructure and human resources allocated to operate such an infrastructure*
- *They would provide for significantly less administrative burden* on numerous Industry's entities related to providing evidences of compliance.
- They would provide *comparably reliable operation* of power systems.
- They are *based on physical limitations of various components of transmission facilities.*
- They would *prevent potentially huge increase of cost* of market operations.
- They provide *more clarity and avoid ambiguity and interpretation issues.*

Likes 0

Dislikes 0

Response

The SDT appreciates your comments. Your comments on these impacts were made by many industry participants. As such, the SDT listened and revised the FAC standards. In addition, the SDT is proposing to make changes to the TOP-001 and IRO-008 standards to address the concern you and other industry commenters have raised. Based on the concerns, the SDT revised FAC-011 and made requirement R6 and its subrequirements a framework for use in determining SOL exceedances. The SDT has made revisions in TOP-001 and IRO-008 that when SOL exceedances are determined in those standards, the determination is made using the framework established by FAC-011-4 requirement R6. In addition, recognizing the communication and documentation concerns raised by using the SOL exceedance framework and existing requirements in TOP-001 and IRO-008, the SDT included a new requirement (R7) in FAC-011-4 which required inclusion in the SOL methodology “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur.”. This allows the RC and its TOPs to manage communication of the SOL exceedances using a method defined by the RC. In addition, the SDT modified some of the measure language in TOP-001 and IRO-008 such that examples of acceptable documentation have been expanded to demonstrate compliance with those requirements where communication of SOL exceedances is required. Some of those examples in electronic communications, the Reliability Coordinator’s SOL methodology, system logs/records showing successfully mitigated SOL exceedances in conjunction with Operating Plans (e.g. mutually agreed operating protocols between TOPs and their Reliability Coordinator, Operating Procedures, Operating Processes, operating policies, generator redispatch logs, equipment settings for automatically switched equipment and reactive power/voltage control devices, switching schedules, etc.).

The SDT goal with these changes was to lessen any administrative burden caused by the revised FAC standards and instead allow system operators focus on operating the system within these new standards and allow reasonable efforts for compliance documentation.

Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations

Answer

Document Name

Comment

We believe R1 should be the only requirement in FAC-011-4. The SDT can accomplish their goal by having Requirement R1 that requires an entity to cover the performance criteria within a newly created appendix. There are 9 requirements and approximately 34 sub-parts in FAC-0011 that increases compliance risk without commensurate benefits to reliability.

Likes 0

Dislikes 0

Response

The SDT appreciates you offering comments on our efforts. Much of the conversation regarding FAC-011 and its current form has focused on inconsistent application of the standard across industry. Those comments, combined with the fact that the edit you suggest would have to be shown to cause no adverse impact on reliable operation of the system on the reliability standard revision process, make your suggested revision untenable, after SDT review.

Kelsi Rigby - APS - Arizona Public Service Co. - 5

Answer

Document Name [Proposed text for FAC-011-4 R5, R6, and R7.docx](#)

Comment

- a. Stability Limit should be capitalized as it is a defined term
- b. The wording of FAC-011-4 R5 implies that stability studies are required for OPAs and RTAs. This would be a new requirement and does not correspond with the SDT’s intent. We suggest the edits to R5 shown in the attached WORD document to clarify that stability studies are not needed for OPAs and RTAs, but, rather, stability limits derived by other studies need to be respected in OPAs and RTAs.
- c. Please clarify the need for the word “potential” in R6 as the word is not used in other places, such as the TPL standards, where single contingencies are also referred to without the word “potential.” We suggest the following language to R6 and R7.
- d. The word “potential” is not used elsewhere to modify contingencies, which are, by their nature, “potential.” For example, in the TPL standards, single contingencies are referred to without the word “potential.” For this reason, AZPS recommends that the SDT clarify the need for inclusion of the word “potential” in R6. If such need is not identified, AZPS suggests the following language to R6 and R7. Further, AZPS

notes that performance criteria is established in Requirement 6.1 as well as in FAC-014, requirement R6. For this reason, its inclusion in Requirement R6.3 appears redundant. AZPS recommends deletion as set forth below. Finally, AZPS recommends consistency when referring to the operation of the BES within SOLs. For this reason, AZPS recommends replacing “violating” with “exceeding” in Requirement R7.

e. The wording of FAC-011-4 R6.1.3 and R6.2.3 seems to imply that dynamic studies are required for OPAs and RTAs. This would be a new requirement and does not correspond with the SDT’s intent. AZPS also suggests adding the word “widespread” under R6.1.3 and R6.2.3 to exclude local area instability or instability of a small generator. We suggest the following edits to R6 to clarify that dynamic studies are not needed for OPAs and RTAs, but, rather, stability limits derived by other studies need to be respected in OPAs and RTAs.

f. As written, FAC-011-4 R6.1.1 and R6.2.1 leaves the burden of proof on the TOP to be able to demonstrate that the operating actions can be taken within the appropriate time of the Facility Rating which is a very difficult and extensive task.

g. Regarding R6.2.1, if RTCA shows that emergency ratings are exceeded, there should be a recognized time frame in which to correct the problem prior to it becoming a compliance issue. As written, the proposed definition does not recognize a time-frame associated with exceedances of the facility’s highest emergency rating. If not recognized, this could lead to a large volume of inconsequential exceedances such as those less than one minute and have magnitude of less than one percent.

h. AZPS suggests R6.1, R6.2, and R6.3 be broken into two separate sub-requirements: one related to Real-time monitoring and Real-time Assessment, and one related to Operational Planning Analysis.

Likes	0
Dislikes	0

Response

The SDT appreciate the comments you offered on our posting. The SDT did not use the capitalized term Stability Limit in FAC-011 because the SDT did not believe the definition captured what was intended the intended use for stability limits within the revised FAC-011 standard. For example, one drafting team member stated that they used a short circuit calculation to determine if additional conventional generation needed to be committed to allow proper operation of non-conventional generator controls. This “limit” did not fit within any defined limit, including Stability Limit, and as such, the SDT decided to use instead the more flexible “stability limits” term to capture those limits that otherwise would fit in no other category.

The wording of requirement R5 has been revised and should no longer imply the need for stability studies for OPAs and RTAs. The SDT has revised all of requirement R6 and removed the word “potential”.

The SDT has revised requirement R6, and specifically subrequirements R6.1.3 and R6.2.3 and removed the implication that dynamic studies are needed for OPAs and RTAs.

The SDT had extensive discussion in regards to the wording in subrequirements R6.1.1 and R6.2.1 with use of emergency limits and any specified time duration of those Emergency Ratings. This is a current issue and not one created by use of the language in this subrequirement. Using this language in the subrequirements, though, does make clear that this issue cannot be ignored by the TOP when using Emergency ratings, which the SDT and many observers felt was appropriate.

With regard to your comments on time frames for SOL exceedance correction in subrequirement R6.2.1, the SDT did not feel it as appropriate to include a time frame within the SOL exceedance determination framework within requirement 6. Instead, the SDT create a new requirement 7 which required the SOL methodology include “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur.” In addition, subrequirements R7.2 and R7.2.1 state that post-contingency SOL thermal exceedances not mitigated within 30 minutes must be communicated. In this way, no timeframe was created to dictate when an SOL exceedance much be mitigated, but this new requirement does define the maximum amount of time that may be taken to mitigate a post-contingent SOL thermal exceedance before it is communicated per the RC’s SOL methodology and per appropriate TOP and IRO requirements.

Finally, with respect to your revision suggestion to subrequirements R6.1, R6.2 and R6.3, the SDT believes that our revisions meet the needs you have described and no longer would benefit from such a revision.

Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1

Answer	
Document Name	
Comment	

This standard in its current form allows a single entity the ability to dictate operating and effectively planning criteria. PNM believes that the development of the SOL methodology should be a joint effort including RCs, TOPs, and PAs.

PNM believes R2 gives the RC that ability to dictate how an entity uses its own Facility Ratings effectively modifying FAC-008. PNM agrees the requirement does not specifically change, limit, or modify Facility Rating determined by the equipment owner; however, there is no point for an entity to establish a Facility rating that can't be used when operating the system. PNM recommend removal of R2 and revision of FAC-008-3 to address any concerns regarding the coordination of Facility Ratings.

PNM questions the reliability basis of R3.3. PNM believes that there may be reasons to have the UVLS setting higher than the limits for certain critical contingencies. FERC order No. 818 specifies not using UVLS for N-1; however, this requirement doesn't have that qualifier. If the SDT feels this concept should be included in the standard that requirement should move under R4.6 and shall clearly specify that it is only applicable to single contingencies.

Likes	0
Dislikes	0

Response

The SDT appreciates the comments you have offered on our posting. The SDT discussed your first comment at length. During the discussion that it is the RC is the entity with the ultimate authority to operate the system. As such, it can clearly establish the criteria used to determine which system operating limits (SOLs) are used in operations. Similarly, the PC is the entity that has the ultimate authority to plan the system. As such, the RC can develop its SOL methodology on any basis, and is not precluded from discussing any aspect of its SOL methodology with any other entity, including PCs. However, the SDT saw that effort as not mandatory, but elective, on the part of the RC as it develops its SOL methodology.

The SDT appreciates your comment on requirement R2. As we have noted to other similar commenters, the RC needs to determine, among many things, the rating set it needs to operate within its footprint. For example, if the RC determines it needs a 15 minute, a 4 hour and a normal, 24 hour thermal rating for each branch in the network, the asset owner can determine if they wish to provide those ratings or not. The RC cannot dictate a facility owner provide a specific rating, but instead can only use the ratings provided within the rating set it

establishes. The SDT felt this wording of requirement R2 was appropriate given the RC’s and asset owners responsibilities. As such, since the RC has the responsibility to respect all limits including thermal, and the SDT believes the RC has the right to determine which ratings it needs to operate, the SDT will not remove requirement R2.

With respect to your comment on subrequirement R3.3, the System Voltage Limits are only used for post-contingent conditions for the contingencies identified in subrequirement R5.1, per subrequirement R6.2.2. All of the other contingencies identified in subrequirement R5.2 only has to meet the performance framework described subrequirement 6.3, which does not include System Voltage Limits.

Oliver Burke - Entergy - Entergy Services, Inc. - 1

Answer	
Document Name	
Comment	
Entergy supports the comments submitted by MidAmerican Energy Company.	
Likes 0	
Dislikes 0	

Response

Please see our responses to Mid American comments.

Preston Walker - PJM Interconnection, L.L.C. - 2 - SERC,RF

Answer	
Document Name	
Comment	
The construct of the current active version, FAC-011-3, makes for a lengthy RSAW response with respect to Requirements that lump all SOL types (thermal, voltage, stability) into a single Requirement. The SDT efforts to split these types up into their individual areas, should make	

for a much more consistent, focused & streamlined RSAW, appreciated by both the Applicable Functional Entity, and their incoming audit teams alike.

For the SDT’s consideration

In all areas (Standard, Rationale, Mapping, etc.)

- R3.1 “Reliability Coordinators” should be either “Reliability Coordinator” or “Reliability Coordinator’s”; (Note: Given that R3 is talking about the RC SOL Methodology, one could argue that the full reference to the RC SOL Methodology again in R3.1 is duplicative, and could be replaced with “Methodology”);
- R5: Repetitive language around determining stability limits and performing OPA & RTA could be remedied for greater clarity by splitting into one requirement focused on stability limits and one requirement focused on OPA & RTA. Otherwise, to stick to the same structure you have for R5.1, R5.2 & R5.3 could be merged into one sub-requirement.
- R8: Inconsistency between Standard language. “Reliability Coordinator.” vs “Reliability Coordinator(s).”
- M7, M8, M9: Incorrect references to M6, M7 & M8 respectively.

The rationale document for FAC-011-4 has the following typos:

- R3.1 “specificall” should be “specifically”
- R6.1.1 “normal rating” should be capitalized “Normal Rating”
- R8 Rationale discusses R7, when it’s referring to R8.

Likes 0

Dislikes 0

Response

Thank you for your comments. We will review our use of “Reliability Coordinators” throughout the document accordingly.

The SDT revised requirement R5 and its subrequirements and eliminated duplicative references to OPA & RTA.

The SDT also corrected the noted references in measure M7, M8 and M9 or FAC-011-4.

Finally, we appreciate your review of the rationale document and will attempt to correct the concerns you have noted.	
Michael Cruz-Montes - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	
Document Name	
Comment	
No response.	
Likes 0	
Dislikes 0	
Response	
Joe O'Brien - NiSource - Northern Indiana Public Service Co. - 6	
Answer	
Document Name	
Comment	
<p>NIPSCO is in MISO and it appears that the prescribed performance criteria here will change the MISO SOL exceedance methodology that we presently operate under for TOP-001 R14 and R15. This may be a concern.</p> <p>We were triple-booked for the related 2015-09 informational webinar. We were hoping to view the streaming replay but never saw it posted. We inquired and were told it would soon be posted but never saw it. Please post promptly next time if possible. Thanks.</p>	

Likes 0	
Dislikes 0	
Response	
<p>Thank you for your comments. Your comments, and those of other MISO members have been noted and resulted in the SDT asking for observer participation from MISO and MISO members. We were pleased at the level of support offered, and the resulting new posting reflects those efforts.</p> <p>In addition, we have noted your comment regarding the posting of the webinar and have noted it to the appropriate NERC staff.</p>	
Andy Fuhrman - Andy Fuhrman On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Andy Fuhrman	
Answer	
Document Name	
Comment	
See MRO NERC Standards Review Forum comments.	
Likes 0	
Dislikes 0	
Response	
Please see our responses to the comments of the MRO.	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	
Document Name	
Comment	

BPA believes Requirement 3.5 should be modified for clarity: change “provide” to “define.” *”Require the use of common System Voltage Limits between the Transmission Operator and its Reliability Coordinator and “define” the method for determining the common System Voltage Limits to be used in Operations.”*

BPA believes that in Requirement 4.1.3, the term should remain “angular stability” as this is industry standard. “Unit stability” is not a defined term and is not as understood as angular stability.

BPA recommends consolidating requirements 5.2 and 5.3 and requirements 6.3 and 6.4 to make it so an RC may specify additional single or multiple Contingency events or types of Contingency events for use in determining stability limits and performing OPAs and RTAs. BPA does not support the RC being allowed to specify two additional lists (as allowed by 5.2 and 5.3 when not consolidated) of single or multiple Contingency events or types of Contingency events because BPA believes this could complicate the RC’s SOL Methodology without benefiting reliability. If there is a reliability benefit, BPA would like to request the SDT include that in the White Paper.

BPA proposed edits:

5.2. Identify any additional single or multiple Contingency events or types of Contingency events for use in determining stability limits and performing OPAs and RTAs.

Delete 5.3

6.3. The evaluation of the potential Contingencies identified in Part 5.2 against the actual pre-Contingency state (Real-time monitoring and Real-time Assessments) and anticipated pre-Contingency state (Operational Planning Analysis) demonstrates that instability, Cascading, or uncontrolled separation does not occur.

Delete 6.4

Likes 0

Dislikes 0

Response

Thank you for your comments.

The SDT revised subrequirement R3.5 based upon your replacement word suggestion.

The SDT retained “angular stability” in subrequirement R4.1.3.

The SDT recognizes your comment for suggested edits in subrequirements R5.2 and R5.3. Subrequirement R5.3 was removed. Subrequirement R5.2 was revised and simplified as follows:

5.2. Specify additional single or multiple Contingency events or types of Contingency events, if any.

The SDT, based on your comments, those of others, and our discussion, decided to remove the attributions to the contingency’s use. It was felt that the RC should have discretion on how to apply these added contingencies, especially based upon SDT discussion which noted examples that already exist of RCs applying unique contingency types beyond single contingent events to subsets of reliability criteria (for example, for establishment of IROLs only).

Subrequirement R6.4 from the second posting has been removed. Revisions to requirement R6 and subrequirement R6.3, based upon comments such as yours, we believe have addressed your concern.

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1

Answer

Document Name

Comment

MidAmerican Energy Company (MEC) understands and supports the SDT’s efforts to come up with the broad industry consensus with regard to definition of SOL and associated definition of SOL Exceedance. However, we believe that addressing a fundamental concept of SOL Exceedance definition needs to be done within the framework of IRO and TOP standards, where it inherently and logically belongs. Due to reasons that we outlined in response to the question 1 (see above) we find it inappropriate to incorporate the definition of SOL Exceedance as a performance criteria in Requirement 6 of FAC-011-4 Standard and significantly worse and more risky in comparison with coming up with definition of SOL Exceedance.

MidAmerican believes that the proposed changes to Standards FAC-011-4 and FAC-014-3 would cause the following unintended consequences and repercussion:

- If approved, new versions of the NERC Standards FAC-011-4 and FAC-014-3 would expose a large number of TOPs and RC to significant increased compliance risk (direct violation of the FAC-014 R6 in conjunction with FAC-011-4 R6) unless enormous resources and efforts are added within each TOP's/RC's organization.
- If the interpretation is correct that a TOP/RC would not violate FAC standards in case of exceeding performance criteria as long as they implement their Operating Plan (per TOP-001 R14), our above mentioned concern transforms into another concern about huge administrative, compliance related, burden. Namely, TOP/RC would have to have (as evidence of compliance), logging and recording documentation that it implemented its Operating Plan in response to each and every instance when projected post-contingent flow on RTCA exceeds highest emergency rating, even for short time period (such as several minutes).
- Therefore, due to the absence of time-frame considerations for exceedances of projected post-contingent flows or voltages, the new versions of the NERC Standards FAC-011-4 and FAC-014-3 would cause frequent SOL exceedances (and therefore frequent violations of the new FAC-011 performance criteria) and prohibitively costly and time consuming administrative burden.
- This definition may decrease reliability as opposed to the SDT's intention of increasing reliability, because of the overwhelming pressure on transmission operators and reliability coordinators to record and communicate frequent SOL exceedances as opposed of being focused on monitoring and implementing control actions to maintain system reliability in real-time.
- The definition would delay implementation of the Operating Plan in real-time due to logging and documentation requirements, as this functionality is not a built-in feature of many SCADA systems in use today.
- Another unintended outcome would be operation in an unnecessarily conservative state, as TOP would have to operate with higher reliability margin from the highest emergency rating, to ensure that following a forced outage or other system disturbance, that the next execution of real-time contingency analysis would not show any facility beyond its highest emergency thermal rating or emergency voltage rating
- The proposed standards would significantly constrain the business in the industry as conservative limits would not allow for many of scheduled outages to proceed without risk of SOL exceedance/performance criteria violation.

The SDT should reconsider adoption of the performance criteria/SOL exceedance per above mentioned suggestions, which are in accordance with current definition of SOL exceedance that is in effect in MISO Reliability footprint. These modifications would provide the following benefits:

- They are *more realistic in recognizing reality of existing transmission infrastructure and human resources allocated to operate such an infrastructure*
- *They would provide for significantly less administrative burden on numerous Industry’s entities related to providing evidences of compliance.*
- They would provide *comparably reliable operation of power systems.*
- They are *based on physical limitations of various components of transmission facilities.*
- They would *prevent potentially huge increase of cost of market operations.*
- They provide *more clarity and avoid ambiguity and interpretation issues.*

Likes 0

Dislikes 0

Response

The SDT appreciates the comments of MidAmerican Energy Co. and, more so, its participation in the SDT team’s efforts since the second posting. Those efforts have resulted in revisions to FAC-011-4, FAC-014-3, TOP-001 and IRO-008 which we believe address the concerns you raise above, and other commenters have noted. These revisions have been made to accomplish the following:

- Have SOL exceedances determined in the appropriate TOP and IRO standards rather than the FAC standards.
- The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards

- FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur”. This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.
- The measures for a few TOP and IRO standards were revised to better describe a more complete set of potential evidence that may be used to show compliance. In addition, the standard rationales have been revised to explain how this evidence may be used to show compliance with the standards.

We believe these changes, which were developed with the support of and feedback from your company and others from within MISO, should address these commonly held industry concerns.

Sing Tay - OGE Energy - Oklahoma Gas and Electric Co. - 6, Group Name OKGE

Answer

Document Name

Comment

OKGE supports the comments provided by MRO NSRF.

Likes 0

Dislikes 0

Response

Please see our responses to the comments of the MRO.

Leonard Kula - Independent Electricity System Operator - 2

Answer

Document Name

Comment

We offer the following specific comments:

Sub-Requirement R4.1.3:

It is not clear what is meant by “unit” stability. We suggest reverting back to using the current term “angular” stability as it is a term well understood by the industry.

Sub-Requirement R4.3:

A main concern is the lack of criteria to define contingencies for the establishment of IROLs. Today, some RCs respect single contingencies, while other respect double contingencies. Given the impact on the Interconnection, it is crucial that criteria for the selection of contingency events is defined and applied consistently in all the RC areas, in order to ensure that all IROLs within a defined scope are detected and properly studied. We recommend that the following wording is added to Sub-Requirement R4.3 to establish SOLs that impact on the Interconnection:

“Describe how the Reliability Coordinator establishes stability limits when there is an impact to more than one Transmission Operator in its Reliability Coordinator Area or other Reliability Coordinator Areas in accordance with its SOL Methodology.”

Sub-Requirements R5.2 and R5.3

Sub-Requirements R5.2 and R5.3 require the RC to identify any additional single or multiple Contingency events. We believe that specifying, at a minimum, which contingencies must be respected (similar to Sub-Requirement R5.1.1. for single Contingencies) would

improve reliability. In particular, to the extent there is an alignment in respecting the same set of contingencies and performance criteria for IROLs.

Furthermore, the loss of small or radial portions of the system should be acceptable provided the performance requirements are not violated for the remaining bulk power system.

Sub-Requirement R6.2.2

Sub-Requirement R6.2.2 should include the same wording as sub-requirement 6.1.2:

“Voltages are within normal System Voltage Limits; however, emergency System Voltage Limits may be used when System adjustments to return the voltage within its normal System Voltage Limits could be executed and completed within the specified time duration of those emergency System Voltage Limits.”

Sub-Requirements R6.3 and R6.4

For consistency purposes, we recommend that Sub-Requirements R6.3 and R6.4 also require to demonstrate that flow through Facilities are within Normal Ratings, similar to Sub-Requirements 6.1.1 and 6.2.1:

“Flow through Facilities are within Normal Ratings; however, Emergency

Ratings may be used when System adjustments to return the flow within its Normal Rating could be executed and completed within the specified time duration of those Emergency Ratings.”

Sub-Requirements R7.1 and 7.2

Sub-requirements R7.1 and R7.2 require to describe how to identify IROLs, and to identify the criteria for IROLs which is basically the same thing. We recommend merging these sub-requirements into one:

7.1. A description of the criteria to identify the subset of SOLs that qualify as Interconnection Reliability Operating Limits (IROLs) and for developing any associated IROL Tv.

Likes	0
Dislikes	0

Response

Thank you for your comments. We note the similarities between your offered comments and those of NPCC. As such, we have supplied essentially the same responses below to those comments also offered by NPCC.

The SDT revised subrequirement R4.1.3 and used “angular stability”.

With regard to your comment on subrequirement R4.3, the parent requirement, R4, states that the “Reliability Coordinator shall include in its SOL methodology the method for determining the stability limits to be used in operations. The method shall: . . . ” which already makes subrequirement R4.3 subject to the RC’s SOL methodology. We believe the suggested text addition is not necessary in R4.3.

With respect to your suggested changes for subrequirements R5.2 and R5.3, the SDT discussed your concern at length. Based on that discussion, and an inability to find industry consensus, and other industry comments, the SDT combined subrequirements R5.2 and R5.3 into one subrequirement, and simplified it.

In addition, your point with regard to small portions of the system is duly noted and reasonable, but the SDT did not find a location within the standards where this seemed a good fit. As such, it was not included in our revised standards.

With respect to your suggested revision for subrequirement R6.2.2, the SDT did not think it appropriate to suggest post-contingent voltages need to be within normal System Voltage Limits. The SDT agreed that emergency System Voltage Limits are appropriate for use in the post-contingent state. The SDT further recognized that emergency System Voltage Limits make take on a variety of forms, with varying potential time applicability, and as such, thought the each TOP / RC would use their emergency System Voltage Limits appropriately as they transitioned the system to a new pre-contingent state to prepare for the next contingency without the need for further language in the standard.

The SDT discussed at length new subrequirements R6.3 and R6.4, including which reliability criteria should be applicable. The SDT could only agree that any contingencies included in the RC's contingency list per subrequirement R5.2 should only have to demonstrate the performance described in subrequirement R6.3. RCs are not precluded from having more prescriptive criteria for any contingency they specify per subrequirement R5.2. In addition, subrequirement R6.2.1 already establishes appropriate thermal performance in the post-contingent state and is not required to be restated in subrequirement R6.4.

The SDT has accepted your suggestion of combining subrequirements R7.1 and R7.2 into a single requirement.

Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI

Answer	
Document Name	
Comment	
No	
Likes 0	
Dislikes 0	
Response	

Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	
Document Name	
Comment	
<ol style="list-style-type: none"> 1. R 4.1.3: why SDT used “unit stability” instead of “angular”? We believe it is better to match the language in PRC-26 R1. 2. R.4.7: We would recommend revising the requirement R4.7 to state that the use of UFLS and UVLS is not allowed in the establishment of stability limits for the single contingencies identified in R5.1.1. 	
Likes 0	
Dislikes 0	
Response	
<p>Thank you for your comments.</p> <p>We have replaced “unit” with “angular” in subrequirement R4.1.3, as you have suggested.</p> <p>The SDT recognizes the comment you have offered with regard to subrequirement R4.7. The SDT discussed of UVLS and UFLS at length with regard to stability limit determination. The consensus with regard to UVLS use was that, for typical stability concerns, such as angular stability and transient voltage recovery, UVLS would not typically provide any performance improvement, and actually might exacerbate the stability concern, so UVLS should not be used to determine stability limits. While UVLS would not be used to establish a stability limit, modeling UVLS for potential actuation would be useful to determine what the value of the stability limit should be. With regard to UFLS and stability limits, the group consensus was that if a simulation was indicating UFLS actuation within portions of the interconnected system that was still part of the interconnection and not some small island created due to a contingency or RAS action, then UFLS is not an appropriate relay action to rely upon to “save the system” and establish a stability limit.</p>	
Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	

Document Name	
Comment	
<p>The MRO NSRF does have other comments on FAC-011-4:</p> <ul style="list-style-type: none"> R3.3 should be improved by clarifying what undervoltage load shedding (UVLS) systems are in view (i.e. owned by the Transmission Owner, the Distribution Provider, end-use customer). It would seem that R3.3 should not be limited by UVLS relay settings implemented by a distribution utility or an end-use customer. A suggested edit is to clarify these are BES systems as follows: <i>"in-service BES relay settings for undervoltage load shedding..."</i>. Similar to comments provided in question #1 related to R6.5, Requirement R4.7 should be modified to remove the restriction on using UVLS Programs when setting stability limits. It is generally accurate to state that UFLS should not be relied upon to maintain stability, although the SDT needs to recognize that UFLS may be a necessary component to maintain stability of a portion of a system deliberately islanded by a Remedial Action Scheme. As such, R4.7 should be modified to read, <i>"State that the use of underfrequency load shedding (UFLS) programs are not allowed in the establishment of stability limits except in specific, documented circumstances (e.g., Remedial Action Schemes)."</i> <p>We also support the recently developed SAR, submitted as a result of phase 1 of the Standards Efficiency Review project, to retire many non-essential or redundant requirements. To reduce the need for a similar effort in the future, the MRO NSRF requests the SDT to consider if Requirement R8 is sufficiently covered with the IRO-010-2 Requirements. In accordance with IRO-010-2 R1 the Reliability Coordinator can specify any information it needs to support its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The primary purpose of these activities is to identify SOL exceedances. Therefore, it's essential that the Reliability Coordinator would include in its data specifications SOLs from all Transmission Operators, which should remove the need for R8. If kept, there may be overlapping compliance obligations with two requirements for the same activity.</p>	
Likes	0
Dislikes	0
Response	
Thank you for your comments.	

The SDT agreed with your point on subrequirement R3.3 and included the phrase “in-service BES” to better describe the subject UVLS relays. The SDT recognizes the comment you have offered with regard to subrequirement R4.7. The SDT discussed of UVLS and UFLS at length with regard to stability limit determination. The consensus with regard to UVLS use was that, for typical stability concerns, such as angular stability and transient voltage recovery, UVLS would not typically provide any performance improvement, and actually might exacerbate the stability concern, so UVLS should not be used to determine stability limits. If you would like to discuss the particular technical concerns, please contact the SDT; we would be willing to listen to more details to better understand your concern in this regard

With regard to your comment on IRO-010-2 and requirement 8, the SDT reviewed its potential use within the standards considered for the SDT. The SDT has proposed revisions to FAC-011, FAC-014, TOP-001 and IRO-008 where we attempted to specify the minimum data expectations to determine SOL exceedances, and allow that any further RC data needs can indeed be captured per IRO-010 and its requirements.

Kayleigh Wilkerson - Lincoln Electric System - 5, Group Name Lincoln Electric System

Answer

Document Name

Comment

R3.1 introduces ambiguity and potential inconsistency by allowing the Reliability Coordinator to decide whether to require that a BES bus/station have an associated System Voltage Limit without also requiring any sort of technical rationale or criteria. If the intent of R3.1 is to address a specific issue, LES recommends the drafting team clarify their intent within the requirement.

R3.2 is confusing and unnecessary with an in-place definition of System Voltage Limit. As written, R3.2 appears to provide two different methods for an entity to determine voltage limits.

R3.3 should state: “Require that **the upper (or higher)** System Voltage Limits...” for improved clarity.

R3.4 should be removed in consideration that the definition of System Voltage Limit already requires a “minimum steady-state voltage limit”. Combining the language from the definition and R3.4 would essentially read “Identify the lowest allowable minimum steady-state voltage limit...”

LES is concerned that R2 does not provide adequate assurance that the RC will respect the Facility Ratings established by the TO or the TO’s FAC-008 methodology. As written, the language is vague and appears to allow the RC to determine the Facility Ratings that a TO must use. Also, based on the NERC definition of Facility Rating, there is a potential conflict between System Voltage Limits and Facility Ratings as both could utilize voltage ratings. These conflicts between FAC-011-4 and FAC-008-3 and the definition of Facility Rating need addressed.

Likes 0

Dislikes 0

Response

Thank you for your comments.

We believe your comment regarding subrequirement R3.1 was unique and not commonly held. The subrequirement was worded in that fashion to allow flexibility for those who wished to specify System Voltage Limits for every station to do so while allowing other entities which used set of voltage limits for a selected set of system stations for the same purpose. Therefore, we will not choose to act on your suggestion at this time.

The definition for System Voltage Limits, which pasted ballot on second posting, is shown below:
 “The maximum and minimum steady-state voltage limits (both normal and emergency) that provide for acceptable System performance.”
 The definition for System Voltage Limit does not make reference voltage-based Facility Ratings, and as such, the SDT believes subrequirement R3.2 should be retained.

The SDT does not agree with your revision suggestion for subrequirement R3.3. System Voltage Limits were commonly discussed by the SDT as ones that have upper and lower bounds, and with respect to UVLS, or under voltage load shedding, the low bound, not upper, would be the applicable and pertinent System Voltage Limit per this subrequirement. As a result, while appreciated, your suggested revision is not being used at this time.

The SDT has considered your suggestion that subrequirement R3.4 be removed. It is true that the definition for System Voltage Limit includes the phrase “minimum steady-state voltage limit”, the “lowest allowable” voltage limit identified per subrequirement R3.5 may not be the “minimum steady-state voltage limit. . . that provide(s) acceptable performance”. As such, the SDT has elected to retain the subrequirement.

Finally, the SDT appreciates your comment on requirement R2. As we have noted to other similar commenters, the RC needs to determine, among many things, the rating set it needs to operate within its footprint. For example, if the RC determines it needs a 15 minute, a 4 hour and a normal, 24 hour thermal rating for each branch in the network, the asset owner can determine if they wish to provide those ratings or not. The RC cannot dictate a facility owner provide a specific rating, but instead can only use the ratings provided within the rating set it establishes. The SDT felt this wording of requirement R2 was appropriate given the RC’s and asset owners responsibilities. As such, since the RC has the responsibility to respect all limits including thermal, and the SDT believes the RC has the right to determine which ratings it needs to operate, the SDT will not remove requirement R2.

Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6

Answer

Document Name

Comment

With respect to R5.4, requiring Reliability Coordinators to identify Contingency events to use in determining stability limits for the Near Term Planning Horizon (FAC-015-1 R4) which also includes 5-year horizon is added burden to both Reliability Coordinators and the Planning Coordinators/Transmission Planners without added benefit. The drafting team should consider limiting this requirement to 0-1 year period which would be the most concerning for the Reliability Coordinators.

Likes 0

Dislikes 0

Response

Thank you for your comment.

Richard Jackson - U.S. Bureau of Reclamation - 1

Answer	
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	
Ginette Lacasse - Seattle City Light - 1,3,4,5,6 - WECC, Group Name Seattle City Light Ballot Body	
Answer	
Document Name	
Comment	
No further comments	
Likes 0	
Dislikes 0	
Response	
Laura Nelson - IDACORP - Idaho Power Company - 1	
Answer	
Document Name	
Comment	

It is not clear what other additional single contingency events are there that are not already included in R5.1.1.

Some guidance/criteria in selecting/identifying multiple contingency events (R5.2) for use in OPAs & Real-time Assessments would not only be helpful but ensure that the set of contingencies that meet basic minimum criteria are being evaluated.

Likes 0

Dislikes 0

Response

Thank you for your comments. One example of a single contingent event that is not included in the current version of subrequirement R5.1.1 is loss of a single breaker. For certain substation designs, either under all facilities in-service or facility out (breaker out) conditions, the loss of a single breaker could cause a line end open condition and cause a post-contingent high voltage condition. The SDT, in collaboration with the drafting team's observers, agreed to not expand the single event contingency list described in R5.1.1.

With regard to your comment on guidance / criteria in selecting/identifying multiple contingency events, the SDT discussed this issue at length. While SDT members offered some of their practices with respect to multiple element contingencies they respected in their own footprints, consensus could not be reached beyond the inclusion of subrequirement R5.2 as worded for the second, and soon to come posting, neither of which includes such guidance / criteria.

Jack Stamper - Clark Public Utilities - 3

Answer

Document Name

Comment

Just a general comment on the use of the term "owner-provided Facility Ratings" used in FAC-011, FAC-014, and FAC-015. I believe this reference is referring to the FAC-008 Facility Ratings that TOs and GOs are required to determine and make available to various reliability entities. This may or may not be true. If it is true, any ambiguity could be eliminated by changing the reference to "Transmission Owner and Generator Owner provided Facility Ratings determined in accordance with FAC-008."

Please at least address the issue in the response to this comment especially if there is a different owner provided facility rating that these standards are referring to. Thanks.

Likes 0

Dislikes 0

Response

Thank you for your comment. You are correct in that the phrase quoted – “owner-provided Facility Ratings” – are with respect to those Facility Ratings provided per FAC-008 by Transmission and Generation Owners. The SDT thought the phrase was clear enough, and based upon your comment being the only one to note this specific ambiguity, the SDT has left the phrasing in the interest of brevity in the standard language.

3. The SDT acknowledges that requirement R6 could alternatively be located within a TOP or IRO standard; however, the Project 2015-09 SAR does not specifically authorize the SDT to modify those standards. The SDT is seeking feedback specific to the content of the requirement not where it should reside. Proposed Requirement R6 was created to correspond with FAC-011-4 Requirement R6 in lieu of creating a definition for SOL Exceedance. Do you agree with Requirement R6?

Laura Nelson - IDACORP - Idaho Power Company - 1

Answer	Yes
---------------	-----

Document Name	
----------------------	--

Comment

Subject to previous comments.

Likes	0
-------	---

Dislikes	0
----------	---

Response

Please see responses to previous questions.

Leonard Kula - Independent Electricity System Operator - 2

Answer	Yes
---------------	-----

Document Name	
----------------------	--

Comment

However, we have the same comment as with Question 1:

Throughout the standard development process for the revisions of the IRO/TOP standards the IESO continued to comment on our serious concern over the proposed retirement of Requirement R4 of TOP-004-2 without having it reinstated in TOP-001-3 or having some of the

requirements in TOP-001-3 revised to addressing the reliability need for confirming or reestablishing valid SOLs/IROLs in an unknown or unstudied state.

We recognize that this issue is not within the scope of this project, but is directly related through the methodology that will be used to determine operating limits for these unknown states. In order to better coordinate the development of standards, we recommend that the scope of future NERC projects should better identify relationships between families of standards at the onset, and encourage potential revisions to related requirements.

Likes 0

Dislikes 0

Response

Thank you for commenting. Please see responses to concerns in Q1.

Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford

Answer Yes

Document Name

Comment

GTC understands this question to refer to FAC-014, Requirement R6.

Likes 0

Dislikes 0

Response

That is correct.

Preston Walker - PJM Interconnection, L.L.C. - 2 - SERC,RF

Answer Yes

Document Name

Comment

Related to Proposed **FAC-014-3** Requirement R6, PJM has no additional comment.

Likes 0

Dislikes 0

Response

Thank you for clarifying.

Russell Noble - Cowlitz County PUD - 3

Answer Yes

Document Name

Comment

Cowlitz PUD is not certain which standard requirement corresponds with Requirement R6 (should not be corresponding to itself), but agrees with detailed descriptions contained in a requirement rather than in a defined term. We affirm Proposed Requirement R6 created to correspond with FAC-011-4 (rather than in a TOP or IRO standard) is preferable to creating a detailed, and complicated SOL Exceedance NERC Glossary term.

Likes 0

Dislikes 0

Response

Thank you for your response. However, after considering feedback from this posting the FAC-011-4 R6 requirement has been improved and the drafting team is proposing to effectively remove the language from FAC-014-3 R6 previously proposed and add it to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.

The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards.

FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur”. This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company

Answer	Yes
---------------	-----

Document Name	
----------------------	--

Comment

Southern believes that R6 should be a part of an operating standard in the IRO standard category.

Likes	0
-------	---

Dislikes	0
----------	---

Response

Thank you for your comments. The previously proposed R6 requirement has been removed from FAC-014-3 and effectively added to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.

The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards.

FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur”. This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.

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

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Jack Stamper - Clark Public Utilities - 3

Answer Yes

Document Name

Comment

Likes 0	
Dislikes 0	
Response	
Scott Downey - Peak Reliability - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF, Group Name PPL NERC Registered Affiliates	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kathleen Goodman - Kathleen Goodman On Behalf of: Michael Puscas, ISO New England, Inc., 2; - ISO New England, Inc. - 2 - NPCC	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Amy Casuscelli - Amy Casuscelli On Behalf of: Michael Ibold, Xcel Energy, Inc., 3, 1, 5; - Amy Casuscelli	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Quintin Lee - Eversource Energy - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Brandon Gleason - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Godbout - Hydro-Qu?bec TransEnergie - 1 - NPCC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	

Texas RE agrees this information would be better suited in the TOP and IRO standards. The current approach requires understanding of how FAC-011-4 and FAC-014-3 fit together as they both refer to each other. It is confusing that the requirements must be read together, even though they reside in two different standards.

Likes 0

Dislikes 0

Response

Thank you for your comments. The previously proposed R6 requirement has been removed from FAC-014-3 and effectively added to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.

The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards.

FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur”. This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.

Eric Shaw - Eric Shaw On Behalf of: Lee Maurer, Oncor Electric Delivery, 1; - Eric Shaw

Answer

Document Name

Comment

N/A

Likes 0

Dislikes 0

Response

Richard Jackson - U.S. Bureau of Reclamation - 1

Answer No

Document Name

Comment

The wording of FAC-011-4 R6.1.1 and 6.1.2 is unclear. Words appear to be missing in the phrase “may be used when System adjustments to return the voltage...”. Reclamation recommends the SDT review R6.1.1. and R6.1.2 to ensure clarity.

Likes 0

Dislikes 0

Response

Thank you for your comments. The drafting team is unclear about which words you believe to be missing and believes the requirement is clear. The concept is that if the steady-state flow through facilities (or the voltage) exceeds that of normal ratings on the facility, emergency ratings (for those that allow higher flows/voltages than normal ratings) may only be used so long as the time they are valid for is not exceeded. As such, the system adjustments necessary to return flows/voltages to below the normal rating but must be complete before the time the emergency rating is valid for runs out.

Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6

Answer No

Document Name

Comment

: PacifiCorp agrees with Requirement R6 except for the comments made in question 1.

Likes 0

Dislikes	0
Response	
Thank you for your comments. They will be addressed in Response to those made in Q1.	
Thomas Foltz - AEP - 5	
Answer	No
Document Name	
Comment	
While AEP supports, in general, the proposed revisions to FAC-011, we believe additional clarity is needed within 6.1.3 to make it clear these obligations are only in reference to known stability limits and do *not* require TOP-provided, dynamic, real-time stability studies. While there are entities that do perform such real-time stability studies, this requirement should not impose that sort of analysis on *all* TOPs. AEP has chosen to vote negative on this revised standard driven by the current lack of clarity in this regard.	
Likes	0
Dislikes	0
Response	
Thank you for your comments. The SDT has revised the sub requirements in R6 that deal with stability and have tried to remove that text which implies a need to perform real-time stability analysis. It is not the intent of the SDT to require any entity to perform real-time stability analysis as part of their Real Time Assessments.	
Don Schmit - Nebraska Public Power District - 5	
Answer	No
Document Name	
Comment	
NPPD supports the comments submitted by the MRO NSRF.	

Likes	0
Dislikes	0
Response	
Thank you for your comment. Please see the response provided to the MRO NSRF.	
Keyleigh Wilkerson - Lincoln Electric System - 5, Group Name Lincoln Electric System	
Answer	No
Document Name	
Comment	
LES supports the comments provided by the MRO NSRF.	
Likes	0
Dislikes	0
Response	
Thank you for your comment. Please see the response provided to the MRO NSRF.	
Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	No
Document Name	
Comment	
<p>The MRO NSRF is not clear if the question is addressing FAC-014-3 R6, but we believe it is. Although we understand the SDT's intent of placing R6 in FAC-014-3, it's inappropriate to place an operating requirement within the FAC family of standards and doing so is contrary to the improvements being made to the NERC Reliability Standards via various forums, including the Standards Efficiency Review project. More importantly, we believe that the existing relevant IRO and TOP standards adequately cover what FAC-014-3 R6 intends to implement. For example, TOP-001-4 requires an RTA to be performed by the Transmission Operator in requirement R13. The Transmission Operator is required to examine both the pre-Contingency and post-Contingency states based on the definition of Real Time Assessment. By creating</p>	

FAC-011-3 R5 and R6, the SDT has adequately covered what Contingencies need to be evaluated to identify or monitor SOLs as part of RTAs and OPAs. Similarly, we believe the language of IRO-008-2 R1 and R4 as well as TOP-001-4 R10 and TOP-002-4 R1 adequately address the SDT's concern and language of proposed FAC-014-3 R6.

Likes 0

Dislikes 0

Response

Thank you for your comments. The question is addressing FAC-014-3 R6; sorry for the confusion. Although TOP-001-4 R10 does require monitoring for SOL exceedances and R13 does require an RTA to be performed, neither requirement ties both concepts together for determining SOL exceedances. Furthermore, TOP-002-4 R1, IRO-008-2 R1 and R4 do not reference how SOL exceedances should be defined; which is what the drafting team had attempted in proposed FAC-011-4 R6. Therefore, the drafting team believes the existing standards quoted do not sufficiently address the issue of uniformity for proper treatment of SOL exceedances necessary for maintaining BES reliability.

While the TOP and IROL standards use "SOL exceedance" numerous times, there is no definition of the term anywhere within the standards. Recognizing this and past comments on the SDT's prior postings on FAC-011, the proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards. As a result, the previously proposed R6 requirement has been removed from FAC-014-3 and effectively added to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards. the SDT is revising FAC-011-4 R6 to allow each RC to define SOL exceedances in their methodology, using as an initial basis the performance criteria in R6. This tact should allow each RC the flexibility needed to account for any unique concerns within its footprint while allowing a more seamless use of SOL exceedances defined by this methodology in the TOP and IRO standards.

Furthermore, FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include "a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur". This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.

Patti Metro - National Rural Electric Cooperative Association - 3,4

Answer	No
Document Name	
Comment	
As stated, in Q1 NRECA does not agree with the proposed R6. NRECA believes that the drafting team is not exercising its due diligence by not considering a revised SAR for this project to include a review of the TOP and IRO standards.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. The previously proposed R6 requirement has been removed from FAC-014-3 and effectively added to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.	
The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards.	
FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur”. This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECl	
Answer	No
Document Name	
Comment	

AECI supports comments provided by NRECA.

As stated, in Q1 NRECA does not agree with the proposed R6. NRECA believes that the drafting team is not exercising its due diligence by not considering a revised SAR for this project to include a review of the TOP and IRO standards.

Likes 0

Dislikes 0

Response

. Thank you for your comments. The previously proposed R6 requirement has been removed from FAC-014-3 and effectively added to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.

The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards.

FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur”. This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.

Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion

Answer

No

Document Name

Comment

Likes 0

Dislikes 0

Response

Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC

Answer No

Document Name

Comment

BPA recommends that FAC-011-4 R6 (6.3 and 6.4) be consolidated. With this edit (see BPA's response to question 2 above) BPA supports FAC-011-4 R6.

Likes 0

Dislikes 0

Response

Thank you for your comments. The drafting team agrees that FAC-011-4 R6.3 and R6.4 should be consolidated and R6.3 has been revised accordingly.

Sing Tay - OGE Energy - Oklahoma Gas and Electric Co. - 6, Group Name OKGE

Answer No

Document Name

Comment

OKGE supports the comments provided by MRO NSRF.

Likes 0

Dislikes	0
Response	
Thank you for your comment. Please see the response provided to the MRO NSRF.	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1	
Answer	No
Document Name	
Comment	
<p>Additional, patient efforts by the SDT to develop a flexible definition of SOL exceedance is a superior approach versus a FAC-011 and FAC-014 performance requirement. The language of IRO-008-2 R1 and R4 as well as TOP-001-4 R10, R13 and R14 and TOP-002-4 R1 would be sufficient and would adequately address the SDT's concerns and industry's needs.</p> <p>MidAmerican shares the MRO NSRF position regarding FAC-014-3 R6 that <i>"it's inappropriate to place an operating requirement within the FAC family of standards and doing so is contrary to the improvements being made to the NERC Reliability Standards via various forums"</i>.</p> <p>General principles and good utility practice within the industry is to align and coordinate definition of SOL and SOL exceedance/performance criteria between RC and TOP's within the RC's reliability footprint,. Consequently, all arguments presented in answering Questions 1 and 2 would apply and be of a significant concern to the TOPs.</p>	
Likes	0
Dislikes	0
Response	
<p>The SDT appreciates your comment offered. While the SDT supports your perspective in the value of an explicit SOL exceedance definition, it was apparent from prior postings and comments that the industry as a whole did not. Our latest FAC-011-4 revision, with the proposed R6, is our attempt at providing a minimum set of performance criteria across the industry for establishing SOL exceedances. R6 should be the minimal basis any RC uses to define SOL exceedances within its footprint. Thank you for your comments. The previously proposed R6 requirement has been removed from FAC-014-3 and effectively added to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.</p>	

The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards.

FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur”. This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.

We hope you can understand our rationale and support the proposed FAC-011-4 language in our next posting.

For further responses to your comments, please see the response provided to the MRO NSRF.

Andy Fuhrman - Andy Fuhrman On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Andy Fuhrman

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

See MRO NERC Standards Review Forum comments.

Likes 0	
---------	--

Dislikes 0	
------------	--

Response

Thank you for your comment. Please see the response provided to the MRO NSRF.

Joe O'Brien - NiSource - Northern Indiana Public Service Co. - 6

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

NIPSCO feels that R6 belongs in the TOP and IRO standards. We understand the SDT does not currently have access to these standards but that should not mean that this requirement is not placed in the appropriate standard. There will need to be a review of the TOP and IRO standard to place R6 in the appropriate place.

Likes 0

Dislikes 0

Response

Thank you for your comments. The previously proposed R6 requirement has been removed from FAC-014-3 and effectively added to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.

The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards.

FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur”. This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.

Michael Cruz-Montes - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE

Answer

No

Document Name

Comment

CenterPoint Energy does not believe that the added requirements in Requirement R6 nor a definition for SOL Exceedance is necessary. Furthermore, CenterPoint Energy believes the SDT unnecessarily broadened the scope of the language by using the term “SOL

exceedances” without additional focus on those exceedances that adversely impact the reliability of the BES. CenterPoint Energy recommends that the SDT clarify the intent of Requirement R6.

Likes 0

Dislikes 0

Response

Thank you for your comments. The drafting team feels the treatment of SOL exceedances both lacks uniformity and is not being performed as intended by the current set of standards. Therefore, the drafting team is working to clarify the existing standards by creating a requirement in FAC-011-4, R6, outlining the performance criteria minimum framework that each RC footprint must meet in defining determining SOL exceedances in lieu of a prescribed SOL Exceedance definition. Without proper treatment of all types of SOL exceedances, they may need to adverse system impacts. As such, and to provide clarity across the industry, the drafting team is trying to address them all. The SDT did include in its R6 impact on the “BES” to limit the potential scope of instability, per your comment. The SDT also made many other revisions to R6 to improve its clarity.

Please also note that the previously proposed R6 requirement in FAC-014-3 has been removed and has been effectively added to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.

Oliver Burke - Entergy - Entergy Services, Inc. - 1

Answer No

Document Name

Comment

Entergy supports the comments submitted by MidAmerican Energy Company.

Likes 0

Dislikes 0

Response

Thank you for your comment. Please see the response provided to MidAmerican.

Kelsi Rigby - APS - Arizona Public Service Co. - 5

Answer No

Document Name

Comment

No, AZPS is concerned that as proposed, requirement R6 of FAC-014-3 results in a redundancy that could result in ambiguity and confusion. For this reason, AZPS recommends that "SOL exceedance" be defined in FAC-014-3 R6, or FAC-014-3 R6 refers to FAC-011-4 R6 performance criteria instead of referencing "SOL exceedance."

Likes 0

Dislikes 0

Response

Thank you for your comments. The previously proposed R6 requirement has been removed from FAC-014-3 and effectively added to both IRO-008 and TOP-001 with references to the RC's SOL methodology (FAC-011-4) such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.

Please note the proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards.

Also, FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include "a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur". This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.

Kevin Salsbury - Berkshire Hathaway - NV Energy - 5

Answer No

Document Name

Comment

NV Energy shares industry concerns regarding FAC-014-3 R6 that *“it’s inappropriate to place an operating requirement within the FAC family of standards and doing so is contrary to the improvements being made to the NERC Reliability Standards via various forums”*.

Furthermore, general principle and good utility practice within the industry is to align and coordinate definition of SOL and SOL exceedance/performance criteria between RC and TOP’s within the RC’s reliability footprint,. Consequently, all arguments that we presented in answering Questions 1 and 2 would apply (and be of a significant concern) to TOPs. Please see all our comments and arguments above.

In conclusion, if additional, patient efforts are done by SDT to formulate broad and flexible definition of SOL exceedance, the language of IRO-008-2 R1 and R4 as well as TOP-001-4 R10, R13 and R14 and TOP-002-4 R1 would be sufficient and would adequately address the SDT’s concerns and industry’s needs.

Likes 0

Dislikes 0

Response

Thank you for your comment. As it echoes that of MidAmerican Energy Company please see our response to MidAmerican.

Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations

Answer No

Document Name

Comment

The SDT should consider revising the SAR to include modifications to TOP or IRO standards. The SDT should not go forward with Requirement R6 until they have reviewed TOP or IRO alternatives.

Likes 0

Dislikes 0

Response

The SDT appreciates your comments. The previously proposed R6 requirement has been removed from FAC-014-3 and effectively added to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.

The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards.

FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur”. This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.

Tommy Drea - Dairyland Power Cooperative - 5

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

DPC supports the comments of MRO NSRF.

Likes	0
-------	---

Dislikes	0
----------	---

Response

Thank you for your comment. Please see the response provided to MRO NSRF

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

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

The SDT appreciates your comment offered. While the SDT supports your perspective in the value of an explicit SOL exceedance definition, it was apparent from prior postings and comments that the industry as a whole did not. Our latest FAC-011-4 revision, with the proposed R6R6, is our attempt at providing a minimum set of performance framework for determining SOL exceedances as required by the TOP and IRO standards criteria across the industry for establishing SOL exceedances. R6 should be the minimal basis any RC uses to define SOL exceedances within its footprint. We hope you can understand our rationale and support the proposed FAC-011-4 language in our next posting.

Likes 0

Dislikes 0

Response

The SDT appreciates your comment offered. While the SDT supports your perspective in the value of an explicit SOL exceedance definition, it was apparent from prior postings and comments that the industry as a whole did not. Our latest FAC-011-4 revision, with the proposed R6, is our attempt at providing a minimum set of performance criteria across the industry for establishing SOL exceedances. R6 should be the minimal basis any RC uses to define SOL exceedances within its footprint. We hope you can understand our rationale and support the proposed FAC-011-4 language in our next posting.

Spencer Tacke - Modesto Irrigation District - 4

Answer No

Document Name

Comment

Likes 0

Dislikes 0

Response

Colby Bellville - Duke Energy - 1,3,5,6 - FRCC,SERC,RF, Group Name Duke Energy	
Answer	No
Document Name	
Comment	
<p>We acknowledge the drafting team’s question regarding the substance of R6 for FAC-014-3. We do not have any specific concerns regarding the language used. While we understand that the drafting team is not soliciting comment on where a requirement should reside, we would be remiss not to comment that this requirement is indeed out of place as proposed. The proposed R6 is a Real-time performance requirement surrounded by other requirements pertaining to methodology, and not the execution of said methodology. We understand that the SAR does not allow for an alternative approach at this time, but believe that this may need to be revisited at a later date.</p>	
Likes	0
Dislikes	0
Response	
<p>Thank you for your comments. Please see our response to ACES Power Marketing for more details.</p>	
<p>Douglas Webb - Douglas Webb On Behalf of: Allen Klassen, Westar Energy, 6, 3, 1, 5; Bryan Taggart, Westar Energy, 6, 3, 1, 5; Derek Brown, Westar Energy, 6, 3, 1, 5; Grant Wilkerson, Westar Energy, 6, 3, 1, 5; Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; Jennifer Flandermeyer, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; John Carlson, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; - Douglas Webb</p>	
Answer	No
Document Name	
Comment	
SAR Scope Issue	

The companies believe the proposed revisions to FAC-014-3 R6 are, for all intents and purposes, incorporated into TOP-001 and TOP-002, and, as such, creates a potential conflict with Requirements in TOP-001 and TOP-002.

If that is the case, the proposed FAC-011-3 R6 revisions create a challenge to the SDT by basically requiring revision to TOP-001 and TOP-002 and, as such, the revisions fall outside the scope of the SAR.

Observation: SOL Exceedance Glossary Term

The companies would note, and we are confident the SDT is aware, TOP-001 and TOP-002 could be strengthened by a SOL Exceedance Glossary Term and the proposed R6 revisions do not eliminate the need for a SOL Exceedance Glossary Term.

Likes	0
-------	---

Dislikes	0
----------	---

Response

Thank you for your comments. Regarding your observation, the SDT appreciates your comment offered. While the SDT supports your perspective in the value of an explicit SOL exceedance definition, it was apparent from prior postings and comments that the industry as a whole did not.

Regarding the issue you’ve identified, the **previously proposed R6 requirement has been removed from FAC-014-3 and effectively added** to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.

The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards.

FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur”. This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.

Terry Bilke - Midcontinent ISO, Inc. - 2

Answer	No
Document Name	
Comment	
See comments to question 1. Because the SDT is not authorized to make changes to the TOP or IROs is not sufficient reason to place requirements in standards to which they don't belong. The performance criteria should rightly be debated and crafted in the context of system operations by a SDT with appropriate focus and expertise.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comments. Please see our response to your comments in question 1. In addition please note the previously proposed R6 requirement has been removed from FAC-014-3 and effectively added to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.	
Laura McLeod - NB Power Corporation - 5	
Answer	No
Document Name	
Comment	
Do not agree with 6.5, too restrictive. Should be allowed to apply non-consequential load loss.	
Likes 0	
Dislikes 0	
Response	

Requirement R6.5 from the second posting, which is now requirement R6.4 in the latest version of FAC-011-4, was not intended to address what mitigation actions are acceptable for inclusion in an Operating Plan, including RAS or other post-contingency mitigation actions (including under voltage relays that are not specifically part of an overall Under Voltage Load Shed (UVLS) scheme). The SDT did capture that “planned manual load shedding”, if included in an Operating Plan should be a measure of last resort. With respect to RAS, requirement R4.6 requires that the RC document in their SOL methodology the “allowed uses of Remedial Action Schemes and other automatic post-Contingency mitigation actions in establishing stability limits used in operations” R4.7 specifically requires however “that the use of underfrequency load shedding (UFLS) programs and Undervoltage Load Shedding (UVLS) Programs are not allowed in the establishment of stability limits”. The use of UVLS and UFLS as a safety net and not for performance criteria or in the establishment of a stability limit is consistent with FERC commission comments in FERC Order 818.

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no Dominion, Con Ed and NBPower

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

However, we have the same comment as with Question 1:

Throughout the standard development process for the revisions of the IRO/TOP standards the IESO continued to comment on our serious concern over the proposed retirement of Requirement R4 of TOP-004-2 without having it reinstated in TOP-001-3 or having some of the requirements in TOP-001-3 revised to addressing the reliability need for confirming or reestablishing valid SOLs/IROs in an unknown or unstudied state.

We recognize that this issue is not within the scope of this project, but is directly related through the methodology that will be used to determine operating limits for these unknown states. In order to better coordinate the development of standards, we recommend that the scope of future NERC projects should better identify relationships between families of standards at the onset, and encourage potential revisions to related requirements.

Likes	0
-------	---

Dislikes	0
----------	---

Response

Thank you for your comment. Please see the response provided under Q1.

Douglas Johnson - American Transmission Company, LLC - 1

Answer No

Document Name

Comment

ATC is not clear if the question is addressing FAC-014-3 R6, but we believe it is given that the previous question asked for any further comments on FAC-011-4 and the next question asks for any further comments on FAC-014-3.

Although we understand the SDT's intent of placing R6 in FAC-014-3, it is inappropriate to place an operating requirement within the FAC family of standards and doing so is contrary to the improvements being made to the NERC Reliability Standards via various forums, including the Standards Efficiency Review project. More importantly, we believe that the existing relevant IRO and TOP standards adequately cover what FAC-014-3 R6 intends to implement. For example, TOP-001-4 requires an RTA to be performed by the TOP in requirement R13. The TOP is required to examine both the pre-Contingency and post-Contingency states based on the definition of Real Time Assessment. By creating FAC-011-3 R5 and R6, the SDT has adequately covered what Contingencies need to be evaluated to identify or monitor SOLs as part of RTAs and OPAs. Similarly, we believe the language of IRO-008-2 R1 and R4 as well as TOP-001-4 R10 and TOP-002-4 R1 adequately address the SDT's concern and language of proposed FAC-014-3 R6.

Likes 0

Dislikes 0

Response

Thank you for your comment. Please see the response provided to MRO NSRF and MidAmerican Energy Company.

Brandon McCormick - Brandon McCormick On Behalf of: Carol Chinn, Florida Municipal Power Agency, 6, 4, 3, 5; Chris Gowder, Florida Municipal Power Agency, 6, 4, 3, 5; David Owens, Gainesville Regional Utilities, 3, 1, 5; Don Cuevas, Beaches Energy Services, 1, 3; Ginny Beigel, City of Vero Beach, 3; Joe McKinney, Florida Municipal Power Agency, 6, 4, 3, 5; Ken Simmons, Gainesville Regional Utilities, 3, 1, 5; Neville Bowen, Ocala Utility Services, 3; Randy Hahn, Ocala Utility Services, 3; Richard Montgomery, Florida Municipal Power Agency, 6, 4, 3, 5; Steven Lancaster, Beaches Energy Services, 1, 3; Tom Reedy, Florida Municipal Power Pool, 6; - Brandon McCormick, Group Name FMPPA

Answer	No
Document Name	
Comment	
The SDT appreciates your comments. The previously proposed R6 requirement has been removed from FAC-014-3 and effectively added to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.	
Likes	0
Dislikes	0
Response	
Thank you for your comment. Please see the response provided to ACES Power Marketing.	
David Jendras - Ameren - Ameren Services - 3	
Answer	No
Document Name	
Comment	
The criteria given are not clear as written such that they appear to occur in the Real-time horizon and apply to real-time operations rather than in the Operations Horizon as stated. As a consequence, the criteria do not seem to meet a methodology requirement but an operating one. Specifically, the identification of real-time monitoring and assessment as a demonstration is inappropriate for a FAC methodology requirement and belongs in TOP and IRO standards relating to operations. We believe there should not be an operating requirement in FAC-011 and in our opinion is a poor practice and should be shelved. The Standard "families" set certain expectations and should be respected because to do otherwise will create risks of inconsistency. If the TOP and IRO standards need amending, then amend them!	
Likes	0
Dislikes	0
Response	

Thank you for your comments. Regarding the issue, you've identified, the previously proposed R6 requirement has been removed from FAC-014-3 and effectively added to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.

The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards.

FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include "a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur". This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.

Allie Gavin - Allie Gavin On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Allie Gavin

Answer

No

Document Name

Comment

ITC agrees with the MRO NSRF that it is not clear if the question is addressing FAC-014-3 R6, but we believe it is. Although we understand the SDT's intent of placing R6 in FAC-014-3, it's inappropriate to place an operating requirement within the FAC family of standards and doing so is contrary to the improvements being made to the NERC Reliability Standards via various forums, including the Standards Efficiency Review project. More importantly, we believe that the existing relevant IRO and TOP standards adequately cover what FAC-014-3 R6 intends to implement.

ITC agrees with MEC that if the SDT can formulate a broad and flexible definition of SOL exceedance, the language of IRO-008-2 R1 and R4 as well as TOP-001-4 R10, R13 and R14 and TOP-002-4 R1 would be sufficient and would adequately address the SDT's concerns and industry's needs.

Likes	0
Dislikes	0
Response	
Thank you for your comment. Please see the response provided to MEC which also addresses the MRO NSRF's comments.	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
<p>Without the option of modifying TOP and IRO standards to accommodate a SOL Exceedence definition, it is reasonable to add the performance criteria to FAC-011-4 R6. However, the language in R6 is unclear. While it is clear in 6.1 that we may exceed the Normal Rating without a contingency if we return to Normal within the Emergency Rating time duration, it is not clear in 6.2 that the system response (or anticipated system response) to a single contingency must be within Emergency Ratings. Similarly for 6.3, it is not clear that the criteria is for the system response to the contingency.</p>	
Likes	0
Dislikes	0
Response	
<p>Thank you for your comments. The drafting team has revised FAC-011-4 R6.2 and R6.3 for clarity around this matter by effectively stating "System performance" in response to those contingencies must meet those criteria including flows through facilities must be within Emergency ratings.</p> <p>Please note that the previously proposed R6 requirement has been removed from FAC-014-3 and effectively added to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.</p>	

The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards.

FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur”. This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.

Gregory Campoli - New York Independent System Operator - 2

Answer	No
Document Name	

Comment

IRC Standards Review Committee understands that the current Standards Authorization Request (SAR) doesn’t provide the authority to revise the TPL, MOD, etc. standards that have a potential affiliation with FAC-015. Notwithstanding, the SRC recommends that the drafting team consider that FAC-015 data requirements are redundant with other families of standards and, therefore, provide no additional reliability benefit but add additional compliance burden to responsible entities. For example, MOD-32-1 and TPL-001-4 Requirements both require data provisions that overlap with FAC-015.

Since the SDT for this Project recognized that there might be a better placement of the Project Requirements, yet apparently felt that a process to consider addressing Standards other than those in the Project’s SAR was not available, NERC should consider a process to allow expediting revised SARs that would enable the SDT to address Standards that were not contemplated in the original SAR, while the Project is ongoing.

The IRC would also like to note that the Standard Efficiency Review Project has made similar observations with respect to consolidation of or better coordination of standards. We would suggest that the SDT work with NERC Staff to follow the approach and principles of the SER team to ensure those efficiencies are realized on this project.

Likes 0

Dislikes 0

Response

The SDT considered and explored all avenues to place requirements in the correct families of Reliability Standards and to limit unnecessary requirements. Ultimately, through exhaustive discussions/debates with industry and regulatory stakeholders, the decision was made to retain the notion of coordination of SOL-related performance criteria between planning and operating entities in the FAC family of Reliability Standards.

Robert Blackney - Edison International - Southern California Edison Company - 1,3,5,6 - WECC

Answer

No

Document Name

Comment

SCE shares the opinion of the MRO NSRF regarding FAC-014-3 R6. Specifically, SCE “agrees with the proposed SOL definition. However, as stated in our (MRO NSRF’s) response to question 1, we need additional clarification on the SOL expectation of the SDT.” Additionally, SCE believes “it’s inappropriate to place an operating requirement within the FAC family of standards and doing so is contrary to the improvements being made to the NERC Reliability Standards via various forums.” Finally, SCE believes it is good industry practice to align and coordinate definition of SOL and SOL exceedance/performance criteria between RC and TOP’s within the RC’s reliability footprint.

Likes 0

Dislikes 0

Response

Thank you for your comments. The previously proposed R6 requirement has been removed from FAC-014-3 and effectively added to both IRO-008 and TOP-001 such that requirements for when SOL exceedances are determined are in the appropriate TOP and IRO standards rather than the FAC standards.

The proposed FAC-011-4 requirement R6 has been revised into a framework to be used when determining SOL exceedances, which only occurs as required in the TOP and IRO standards.

FAC-011-4 has a new requirement added (R7) which requires the RC SOL methodology include “a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communications must occur”. This requirement was added to address the ill-defined SOL exceedance communications included within the TOP and IRO standards.

Randy MacDonald - NB Power Corporation - 1

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

Does planned load shedding include automatic load shedding schemes such as UVLS? Within the operational time frame UVLS should be allowed.

Likes 0	
---------	--

Dislikes 0	
------------	--

Response

Thank you for your comment. The drafting teams assumes your comment pertains to FAC-011-4 R6.5. The drafting team has revised R6.5 to clarify the requirement is specifically to prevent manual load shedding before all other System adjustments have been made.

Requirement R6.5 from the second posting, which is now requirement R6.4 in the latest version of FAC-011-4, was not intended to address what mitigation actions are acceptable for inclusion in an Operating Plan, including RAS or other post-contingency mitigation actions (including under voltage relays that are not specifically part of an overall Under Voltage Load Shed (UVLS) scheme). The SDT did capture

that “planned manual load shedding”, if included in an Operating Plan should be a measure of last resort. With respect to RAS, requirement R4.6 requires that the RC document in their SOL methodology the “allowed uses of Remedial Action Schemes and other automatic post-Contingency mitigation actions in establishing stability limits used in operations”. R4.7 specifically requires however “that the use of underfrequency load shedding (UFLS) programs and Undervoltage Load Shedding (UVLS) Programs are not allowed in the establishment of stability limits”. The use of UVLS and UFLS as a safety net and not for performance criteria or in the establishment of a stability limit is consistent with FERC commission comments in FERC Order 818.

William Sanders - Lower Colorado River Authority - 1

Answer	No
Document Name	
Comment	
See comments in response to question 1.	
Likes	0
Dislikes	0

Response

Thank you for your comment. Please see the Q1 comment response.

Teresa Cantwell - Lower Colorado River Authority - 5

Answer	No
Document Name	
Comment	
See comments in response to question 1.	
Likes	0
Dislikes	0

Response

Thank you for your comment. Please see the Q1 comment response.

4. If you have any other comments regarding FAC-014-3 that you haven't already provided, please provide them here.	
Teresa Cantwell - Lower Colorado River Authority - 5	
Answer	
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	
Eric Shaw - Eric Shaw On Behalf of: Lee Maurer, Oncor Electric Delivery, 1; - Eric Shaw	
Answer	
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	
Randy MacDonald - NB Power Corporation - 1	

Answer	
Document Name	
Comment	
<p>Regarding R6: The requirement does not provide sufficient clarity with regard to how SOL methodology is incorporated into RTA and real-time monitoring. For example is the expectation that the methodology be implemented in both RTA and real-time monitoring, or can the real-time monitoring schemes be used to incorporate some aspects of the methodology where the RTA tool lacks capability.</p>	
Likes 0	
Dislikes 0	
Response	
<p>The SDT has updated the proposed FAC-011-4 R6 to clarify that RC's SOL methodology shall include certain performance framework in determining SOL exceedance when performing Real-time monitoring, RTA, and OPA.</p> <p>The SDT has also proposed TOP-001-5 R25 and IRO-008-3 R7 to require both TOP and RC to utilize the RC's SOL methodology in determining SOL exceedance when performing Real-time monitoring, RTA, and OPA.</p>	
Robert Blackney - Edison International - Southern California Edison Company - 1,3,5,6 - WECC	
Answer	
Document Name	
Comment	
<p>SCE concurs with the MRO NSRF's overall comments regarding FAC-014-3.</p>	
Likes 0	
Dislikes 0	
Response	

Please see response to the MRO NSRF's comment.

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

Document Name

Comment

Texas RE recommends that a cleaner approach would be to utilize a definition of SOL exceedance. It is confusing to have FAC-011 and FAC-014 depend on each other to understand what the RC and TOP should be doing with regards to SOL exceedances.

Likes 0

Dislikes 0

Response

The SDT has updated the proposed FAC-011-4 R6 to clarify that RC's SOL methodology shall include certain performance framework in determining SOL exceedance when performing Real-time monitoring, RTA, and OPA.

The SDT has also proposed TOP-001-5 R25 and IRO-008-3 R7 to require both TOP and RC to utilize the RC's SOL methodology in determining SOL exceedance when performing Real-time monitoring, RTA, and OPA.

Brandon Gleason - Electric Reliability Council of Texas, Inc. - 2

Answer

Document Name

Comment

Under part 1.2, Evidence Retention, Requirements R1 through R8 are referenced. However, there are only six Requirements in the proposed revision. ERCOT suggests aligning the Evidence Retention requirement language with the specific number of Requirements.

The Violation Severity Levels table provides “the items listed in Requirement 5, Parts 5.1 through 5.6.” However, there are only five parts in Requirement R5. ERCOT suggests aligning the Violation Severity Levels table to the specific number of parts in Requirement R5.

Likes 0

Dislikes 0

Response

The SDT has updated the Evidence Retention and Violation Security Level.

Allie Gavin - Allie Gavin On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Allie Gavin

Answer

Document Name

Comment

ITC agrees with MRO NSRF that in order to reduce the need for a future Standards Efficiency Review effort, ITC requests the SDT to consider if Requirement R3 is unnecessary and sufficiently covered with the IRO-010-2 Requirements. In accordance with IRO-010-2 R1 the Reliability Coordinator can specify any information it needs to support its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The primary purpose of these activities is to identify SOL exceedances. Therefore, it’s essential that the Reliability Coordinator would include in its data specifications SOLs from all Transmission Operators. Once the data specification is sent to the Transmission Operators in accordance with IRO-010-2 R2, the Transmission Operators must provide its SOLs to the Reliability Coordinator to meet the obligations of IRO-010-2 R3. This should remove the need for the proposed FAC-014-3 Requirement R3. If kept, there may be overlapping compliance obligations with two requirements for the same activity.

Likes 0

Dislikes 0

Response

Requirement R3 requires TOPs to provide the SOLs it established (under Requirement R2) to the RC in accordance with the RC’s SOL methodology.

The SDT recognizes that the provision of SOL information from the TOP to the RC may also be addressed via IRO-010-2. While IRO-010 and its requirements allow an RC to request SOLs of its TOPs, R3 in FAC-014 sets a common expectation across industry of the minimum actions any TOP can take when supplying SOLs to their RC. It is opinion of the SDT after lengthy review and industry comment that R3 in FAC-014 provides a sound reliability basis that should be expected in any RC footprint which is not found anywhere else in the current set of standards.

Douglas Johnson - American Transmission Company, LLC - 1

Answer

Document Name

Comment

R5 – This should require providing SOL information to Transmission Planners, not just Planning Coordinators, because there is no requirement for Planning Coordinators to provide this information to Transmission Planners. In addition, in FAC-015-1, Transmission Planners are required to coordinate with the SOLs established by the Reliability Coordinators and Transmission Operators. As such, the Transmission Planners should receive SOL information directly from the Reliability Coordinators and Transmission Operators, rather than second hand information from Planning Coordinators. If the SDT decides to proceed with FAC-015-1 as a standard, FAC-014-3 Part 5.1 and Part 5.2 should be reworded to *“Each Planning Coordinator and each Transmission Planner within . . . ”*

Likes 0

Dislikes 0

Response

The SDT agrees with the comment. The SDT has made the changes in R5.1 and R5.2

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no Dominion, Con Ed and NBPower	
Answer	
Document Name	
Comment	
<p>Requirement R4:</p> <p>Similar to our comment on Sub-Requirement 4.3 (FAC-011-4) in Question 2, a main concern is the lack of criteria to define contingencies for the establishment of IROLs. Today, some RCs respect single contingencies, while other respect double contingencies. Given the impact on the Interconnection, it is crucial that criteria for the selection of contingency events is defined and applied consistently in all the RC areas, in order to ensure that all IROLs within a defined scope are detected and properly studied. We recommend that the following wording is added to Requirement R4 to establish SOLs that impact on the Interconnection:</p> <p><i>“Each Reliability Coordinator shall establish stability limits to be used in operations when the limit impacts more than one Transmission Operator in its Reliability Coordinator Area or other Reliability Coordinator Areas in accordance with its SOL Methodology.”</i></p> <p>Sub-Requirement R5.2.5</p> <p>A description of the associated system conditions is normally included in the RC’s methodology as part of Requirement R4.4 in FAC-011-4. The sub-requirement R5.2.5 can be removed as it is redundant with Requirement R4.4 in FAC-011-4.</p>	
Likes	0
Dislikes	0
Response	
The SDT agrees with regards to FAC-014-3 R4. The SDT has modified R4.	

FAC-011-4 R4.4 is a general requirement for each RC to have in its SOL methodology description how stability limits are determined, considering levels of transfers, Load and generation dispatch, and System conditions including any changes to System topology such as Facility outages; whereas, FAC-014-3 R5.2.5 is a requirement for RC to communicate the specific system condition associated with each of the stability limit or IROL.

For example under FAC-011-4 R4.4 an RC may require studies to be performed for both summer and winter seasons considering peak load condition during summer and high transfer during winter off-peak condition. It is possible that following the study results, an IROL is only established during summer but not during winter. This conclusion needs to be communicated under FAC-014-3 R5.2.5

Terry Bilke - Midcontinent ISO, Inc. - 2

Answer

Document Name

Comment

MISO believes that the TPL-001-4 covers SOLs and IROLs in the long-term planning horizon. Therefore MISO agrees that the Planning Coordinator should not be the applicable entity that establishes and communicates SOLs and IROLs. The requirement for the RC to provide the PC the SOL and IROLs should reside in FAC-015-1, not FAC-014.

R5 – Share results of Operations assessments with Planning: Operations uses real time assessment to identify operating limits. This information has value for Operations assessment, however the value of identifying and sharing these limits with the Planning Coordinator is anticipated to have minimal value to planning assessments. This is in part due to the variability of the scenarios studied in Operations, and how closely those will align to scenarios studied in the Planning Horizon.

Likes 0

Dislikes 0

Response

The purpose of FAC-014 is to establish and communicate. The RC is currently have the responsibility to communicate SOL/IROL; and therefore it is left for FAC-014.

Requirement R5 Part 5.1 requires the RC to provide the PCs and TPs in its RC Area all SOLs and relevant SOL information at least once every 12 calendar months. This provides the PCs and TPs the relevant information necessary for its assessments. It is expected that PCs do not need more frequent updates as most of their assessments are performed on an annual cycle. Transmission Service Providers were not retained as an entity that would have a reliability related need for stability limit and IROL related information. Nothing prohibits an RC from sharing such information outside of a NERC Reliability Standard for other non-reliability related purposes.

Requirement R5 Part 5.2 requires the RC to provide the impacted PCs and TPs additional specific information (consistent with FAC-014-2 R5.1.1 - R5.1.4) for stability limits and IROLs at least once every 12 calendar months. It is expected that PCs and TPs do not need more frequent updates as most of their assessments (and their respective TPs assessments) are performed on an annual cycle. In addition, it requires the RC to provide the impacted PCs the system conditions associated with the Stability Limit or IROL, for example: “summer peak”, “winter peak”, “high import” and etc.

Russell Noble - Cowlitz County PUD - 3

Answer	
Document Name	
Comment	

Cowlitz PUD agrees that the establishment of SOLs and IROLs should be consistent for both operational and planning aspects of the BES. Having a single source for SOL Methodology from the Reliability Coordinator, implementation of the SOL Methodology by the Transmission Operator, and requiring the Planning Coordinator and Transmission Planner to coordinate the Planning Assessments with SOLs and IROLs provided by the Reliability Coordinator will improve Reliability. However, Cowlitz PUD cautions that IROLs should be carefully identified such that local isolated limitations remain as SOLs.

Likes 0	
Dislikes 0	

Response

The SDT will address IROL in phase II of this project following direction and guidance from the MEITF

Douglas Webb - Douglas Webb On Behalf of: Allen Klassen, Westar Energy, 6, 3, 1, 5; Bryan Taggart, Westar Energy, 6, 3, 1, 5; Derek Brown, Westar Energy, 6, 3, 1, 5; Grant Wilkerson, Westar Energy, 6, 3, 1, 5; Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; Jennifer Flandermeyer, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; John Carlson, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; - Douglas Webb

Answer

Document Name

Comment

The companies suggest FAC-014 would be strengthened if it better aligned or explicitly addressed the following precepts:

The RC is in the best position to establish guidelines or criteria for determining System voltage limit.

The companies recognize each entities' system is unique in design, complexity, footprint, and Facilities, as is the RC's. To address the differences between systems across the BES, the companies suggest BES reliability will be strengthened by considering the uniqueness of these systems and letting the RC set guidelines or criteria for determining System voltage limits.

The TOP is in the best position to determine limits and avoid conflicts with Facility Ratings.

The revised proposed Glossary Term, while establishing boundaries, may create circumstances that add complexity to determining Facility Ratings, System Voltage Limits, and stability limits. Generally, adding complexity to Standards adds opportunity for undesired results in operating the BES.

To simplify the determination of System Voltage Limits and stability limits, the companies suggest that the TOP determine these values to ensure they do not conflict with Facility Ratings.

Likes 0

Dislikes 0

Response

The SDT believes that the TOP is the best position to establish SOL in accordance with the RC SOL methodology including System voltage limit. FAC-011 R3.2 does requires that System Voltage Limits respect voltage-based Facility Ratings. In addition, the SDT believes that TOP is also the best entity to establish stability limit when it only impacts one TOP. These limits could exist at the same time and all three limits are considered SOL that should be respected at all times.

No changes made in the proposed FAC-014 standards

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

Answer

Document Name

Comment

The SPP Standards Review Group (SSRG) recommends that the drafting team consider IROLs in Phase II of this project. As discussed at the September 2018 Planning Committee (PC) Meeting, although this project includes IROLs, the drafting team’s feedback to the PC was to focus on only the SOL for this commenting period (Phase I). During Phase II, the drafting team will put more focus on the IROL. This is a reasonable suggestion given that all relevant materials pertaining to the IROL were approved at that most recent meeting and couldn’t be implemented in the Phase I comment period.

Likes 0

Dislikes 0

Response

The SDT will address IROL in phase II of this project following direction and guidance from the MEITF.

Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations

Answer

Document Name

Comment

The sub-Requirements of R5.2 are a list of specific criteria with the exception of the newly added 5.2.5. Sub-part 5.2.5 is unnecessary and is too general of a statement and could include a variety of system conditions. It is unclear what the SDT is trying to accomplish with 5.2.5. Further in Requirement R6, OPAs and RTAs are listed as acronyms and have not been previously defined in the standard. This issue should also be addressed.

Likes 0

Dislikes 0

Response

The SDT has also clarified FAC-014-3 R5.2.5 to better describe the intent and how it complement FAC-011-4 R4.4.

FAC-011-4 R4.4 is a general requirement for each RC to have in its SOL methodology description how stability limits are determined, considering levels of transfers, Load and generation dispatch, and System conditions including any changes to System topology such as Facility outages; whereas, FAC-014-3 R5.2.5 is a requirement for RC to communicate the specific system condition associated with each of the stability limit or IROL.

For example under FAC-011-4 R4.4 an RC may require studies to be performed for both summer and winter seasons considering peak load condition during summer and high transfer during winter off-peak condition. It is possible that following the study results, an IROL is only established during summer but not during winter. This conclusion needs to be communicated under FAC-014-3 R5.2.5

With regards to R6, the SDT has updated the proposed FAC-011-4 R6 to clarify that RC's SOL methodology shall include certain performance framework in determining SOL exceedance when performing Real-time monitoring, RTA, and OPA.

The SDT has also proposed TOP-001-5 R25 and IRO-008-3 R7 to require both TOP and RC to utilize the RC's SOL methodology in determining SOL exceedance when performing Real-time monitoring, RTA, and OPA.

Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1

Answer

Document Name

Comment

R4 in its current form gives the RC the ability to establish stability limits when the limit impacts more than one TOP. PNM proposes the following language for R4: Each Reliability Coordinator, in conjunction with the impacted Transmission Operations, shall establish stability limits to be used in operations when the limit impacts more than one Transmission Operators in its Reliability Coordinator Area in accordance with its SOL methodology.

Likes 0

Dislikes 0

Response

Similar to R1, RC has the authority to establish limits when it impacts wide area.

In R4, the RC can establish stability limit when it impacts more than one TOP or when it impacts other RC. In Requirement R5.3-R5.5, the RC is required to provide all necessary information to impacted TOP so that TOP will have the ability to review RC's determination of SOL

Kelsi Rigby - APS - Arizona Public Service Co. - 5

Answer

Document Name

Comment

None

Likes 0

Dislikes 0

Response

Oliver Burke - Entergy - Entergy Services, Inc. - 1

Answer	
Document Name	
Comment	
Entergy supports the comments submitted by MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Please see response to the MRO NSRF's comment	
Preston Walker - PJM Interconnection, L.L.C. - 2 - SERC,RF	
Answer	
Document Name	
Comment	
For the SDT's consideration	
R5.2.2: The language for the requirement & rationale have two different versions. The requirement appears to be missing the language "critical to the derivation of the".	
Rationale for R6, inconsistent with R1-R5, leverages an informal interpretation of the R6 standard language.	
Likes 0	
Dislikes 0	
Response	
The SDT has updated the FAC-014-3 R5.2.2 and has also updated the rationale to match the standard language.	

Michael Cruz-Montes - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	
Document Name	
Comment	
No response.	
Likes 0	
Dislikes 0	
Response	
Andy Fuhrman - Andy Fuhrman On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Andy Fuhrman	
Answer	
Document Name	
Comment	
See MRO NERC Standards Review Forum comments.	
Likes 0	
Dislikes 0	
Response	
Please see response to the MRO NSRF's comment	
Joe O'Brien - NiSource - Northern Indiana Public Service Co. - 6	

Answer	
Document Name	
Comment	
<p>In R6 what is the definition of “performance criteria”? NIPSCO believes that “performance criteria” is used in R3 in the establishment of SOLs. It is not something separate from that process. R3 states that the TOP supplies SOLs to the RC according to the RC’s SOL Methodology. R6 implies that “performance criteria” is in addition to what is used to establish SOLs. NIPSCO believes that “performance criteria specified in the Reliability Coordinator’s SOL Methodology” should be replaced with “SOLs established as part of R3”.</p>	
Likes 0	
Dislikes 0	
Response	
<p>The SDT has updated the proposed FAC-011-4 R6 to clarify that RC’s SOL methodology shall include certain performance framework in determining SOL exceedance when performing Real-time monitoring, RTA, and OPA.</p> <p>The SDT has also proposed TOP-001-5 R25 and IRO-008-3 R7 to require both TOP and RC to utilize the RC’s SOL methodology in determining SOL exceedance when performing Real-time monitoring, RTA, and OPA.</p>	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	

Response

Sing Tay - OGE Energy - Oklahoma Gas and Electric Co. - 6, Group Name OKGE

Answer

Document Name

Comment

OKGE supports the comments provided by MRO NSRF.

Likes 0

Dislikes 0

Response

Please see response to the MRO NSRF's comment

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1

Answer

Document Name

Comment

MEC supports the MRO NSRF overall comments regarding FAC-014-3.

Likes 0

Dislikes 0

Response

Please see response to the MRO NSRF's comment

Leonard Kula - Independent Electricity System Operator - 2

Answer

Document Name

Comment

Requirement R4:

Similar to our comment on Sub-Requirement 4.3 (FAC-011-4) in Question 2, a main concern is the lack of criteria to define contingencies for the establishment of IROLs. Today, some RCs respect single contingencies, while other respect double contingencies. Given the impact on the Interconnection, it is crucial that criteria for the selection of contingency events is defined and applied consistently in all the RC areas, in order to ensure that all IROLs within a defined scope are detected and properly studied. We recommend that the following wording is added to Requirement R4 to establish SOLs that impact on the Interconnection:

“Each Reliability Coordinator shall establish stability limits to be used in operations when the limit impacts more than one Transmission Operator in its Reliability Coordinator Area or other Reliability Coordinator Areas in accordance with its SOL Methodology.”

Sub-Requirement R5.2.5

A description of the associated system conditions is normally included in the RC's methodology as part of Requirement R4.4 in FAC-011-4. The sub-requirement R5.2.5 can be removed as it is redundant with Requirement R4.4 in FAC-011-4.

Likes 0

Dislikes 0

Response

The SDT has revised proposed FAC-011-4 R4 to require RC to establish stability limit in accordance to its SOL methodology, which is required to include identification of contingency events. The FAC-011-4 R5 also has been updated so that each RC identify in its SOL methodology the set of Contingency events for use in determining stability limits and the set of Contingency events for use in OPA and RTA.

The SDT has also clarified FAC-014-3 R5.2.5 to better describe the intent and how it complement FAC-011-4 R4.4.

FAC-011-4 R4.4 is a general requirement for each RC to have in its SOL methodology description how stability limits are determined, considering levels of transfers, Load and generation dispatch, and System conditions including any changes to System topology such as Facility outages; whereas, FAC-014-3 R5.2.5 is a requirement for RC to communicate the specific system condition associated with each of the stability limit or IROL.

For example under FAC-011-4 R4.4 an RC may require studies to be performed for both summer and winter seasons considering peak load condition during summer and high transfer during winter off-peak condition. It is possible that following the study results, an IROL is only established during summer but not during winter. This conclusion needs to be communicated under FAC-014-3 R5.2.5

Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI

Answer

Document Name

Comment

AECI supports comments provided by NRECA.

Appears that the drafting team meant to include a specific question on the revisions to FAC-014-03 prior asking for comments on the standard that were not already provided.

NRECA believes the format of R5 and sub-requirement 5.2 is cumbersome and suggest the following "bolded" modifications for consideration to provide clarity.

5.2 Each impacted Planning Coordinator within its Reliability Coordinator Area, shall provide the following information for each

established stability limit and each established IROL at least once every twelve calendar months:

- 5.2.1 The value of the stability limit or IROL;
- 5.2.2 Identification of the Facilities that are included in the derivation to determine the stability limit or IROL;
- 5.2.3 The associated IROL T_v for any IROL;
- 5.2.4 The associated Contingency(ies);
- 5.2.5 A description of the associated system conditions that impacted the determination of the stability limit or IROL; and
- 5.2.6 The type of limitation represented by the stability limit or IROL (e.g., voltage collapse, angular stability).

Likes 0

Dislikes 0

Response

The intent for R5 is to require the RC to provide various data to the various entities based on impacts and needs:

- R5.1 require each RC to provide SOLs to each PC and TP.
- R5.2 requires each RC to provide more information, as specified under sub-bullet 5.2.1-5.2.6, to impacted PC and impacted TP
- R5.3 requires each RC to provide information to impacted TOP
- R5.4 requires each RC to provide information to impacted TOP
- R5.5 requires each RC to provide information to requesting TOP

The SDT has also clarified FAC-014-3 R5.2.5 to better describe the intent and how it complement FAC-011-4 R4.4.

FAC-011-4 R4.4 is a general requirement for each RC to have in its SOL methodology description how stability limits are determined, considering levels of transfers, Load and generation dispatch, and System conditions including any changes to System topology such as Facility outages; whereas, FAC-014-3 R5.2.5 is a requirement for RC to communicate the specific system condition associated with each of the stability limit or IROL.

For example under FAC-011-4 R4.4 an RC may require studies to be performed for both summer and winter seasons considering peak load condition during summer and high transfer during winter off-peak condition. It is possible that following the study results, an IROL is only established during summer but not during winter. This conclusion needs to be communicated under FAC-014-3 R5.2.5

Patti Metro - National Rural Electric Cooperative Association - 3,4	
Answer	
Document Name	
Comment	
<p>Appears that the drafting team meant to include a specific question on the revisions to FAC-014-03 prior asking for comments on the standard that were not already provided.</p> <p>NRECA believes the format of R5 and sub-requirement 5.2 is cumbersome and suggest the following "bolded" modifications for consideration to provide clarity.</p> <p>5.2 Each impacted Planning Coordinator within its Reliability Coordinator Area, shall provide the following information for each established stability limit and each established IROL at least once every twelve calendar months:</p> <p>5.2.1 The value of the stability limit or IROL;</p> <p>5.2.2 Identification of the Facilities that are included in the derivation to determine the stability limit or IROL;</p> <p>5.2.3 The associated IROL Tv for any IROL;</p> <p>5.2.4 The associated Contingency(ies);</p> <p>5.2.5 A description of the associated system conditions that impacted the determination of the stability limit or IROL; and</p> <p>5.2.6 The type of limitation represented by the stability limit or IROL (e.g., voltage collapse, angular stability).</p>	
Likes	0
Dislikes	0
Response	

The intent for R5 is to require the RC to provide various data to the various entities based on impacts and needs:

- R5.1 require each RC to provide SOLs to each PC and TP.
- R5.2 requires each RC to provide more information, as specified under sub-bullet 5.2.1-5.2.6, to impacted PC and impacted TP
- R5.3 requires each RC to provide information to impacted TOP
- R5.4 requires each RC to provide information to impacted TOP
- R5.5 requires each RC to provide information to requesting TOP

The SDT has also clarified FAC-014-3 R5.2.5 to better describe the intent and how it complement FAC-011-4 R4.4.

FAC-011-4 R4.4 is a general requirement for each RC to have in its SOL methodology description how stability limits are determined, considering levels of transfers, Load and generation dispatch, and System conditions including any changes to System topology such as Facility outages; whereas, FAC-014-3 R5.2.5 is a requirement for RC to communicate the specific system condition associated with each of the stability limit or IROL.

For example under FAC-011-4 R4.4 an RC may require studies to be performed for both summer and winter seasons considering peak load condition during summer and high transfer during winter off-peak condition. It is possible that following the study results, an IROL is only established during summer but not during winter. This conclusion needs to be communicated under FAC-014-3 R5.2.5

Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer

Document Name

Comment

To reduce the need for a future Standards Efficiency Review effort, the MRO NSRF requests the SDT to consider if Requirement R3 is unnecessary and sufficiently covered with the IRO-010-2 Requirements. In accordance with IRO-010-2 R1 the Reliability Coordinator can specify any information it needs to support its Operational Planning Analyses, Real-time monitoring, and Real-time Assessments. The primary purpose of these activities is to identify SOL exceedances. Therefore, it's essential that the Reliability Coordinator would include in its data specifications SOLs from all Transmission Operators. Once the data specification is sent to the Transmission Operators in accordance with IRO-010-2 R2, the Transmission Operators must provide its SOLs to the Reliability Coordinator to meet the obligations of IRO-010-2 R3.

This should remove the need for the proposed FAC-014-3 Requirement R3. If kept, there may be overlapping compliance obligations with two requirements for the same activity.

If the SDT decides to proceed with FAC-015-1; then R1, R2, and R3 obligate each Planning Coordinator and each Transmission Planner to use Facility Ratings that are equally limiting or more limiting than those used by the Reliability Coordinator in its Operations Planning Horizon SOLs. Therefore, FAC-014-3 Part 5.1 and Part 5.2 should be reworded to *“Each Planning Coordinator and each Transmission Planner within . . .”*

R5 – should require providing SOL information to Transmission Planners, not just Planning Coordinators, and not rely on Planning Coordinators to provide them to applicable Transmission Planners, especially since there is not a requirement for Planning Coordinators to do so. However, in FAC-015-1 Transmission Planners are required to coordinate with the Reliability Coordinators and Transmission Operators SOLs. Our preference is for the Transmission Planners to get the SOL information directly from the Reliability Coordinators and Transmission Operators, rather than second hand information from Planning Coordinators.

Likes 0

Dislikes 0

Response

Requirement R3 requires TOPs to provide the SOLs it established (under Requirement R2) to the RC in accordance with the RC’s SOL methodology.

The SDT recognizes that the provision of SOL information from the TOP to the RC may also be addressed via IRO-010-2. While IRO-010 and its requirements allow an RC to request SOLs of its TOPs, R3 in FAC-014 sets a common expectation across industry of the minimum actions any TOP can take when supplying SOLs to their RC.

It is opinion of the SDT after lengthy review and industry comment that R3 in FAC-014 provides a sound reliability basis that should be expected in any RC footprint which is not found anywhere else in the current set of standards.

With regards to FAC-014-3 Part 5.1 and 5.2, the SDT has made modification in R5.1 and R5.2

Thomas Foltz - AEP - 5

Answer

Document Name

Comment

AEP believes much of the proposed changes would be beneficial and provide clarity, but would like to provide feedback on some key areas:

While AEP has no objections to the proposed changes to R6, and while acknowledging that no changes were proposed to R2, we still would like to again express our concern how the lack clarity in FAC-011 R6.1.3 potentially impacts these requirements in FAC-014. Once again, clarity is needed in FAC-011 to make it clear these obligations are only in reference to known stability limits and do **not** require TOP-provided, dynamic, real-time stability studies as part of OPAs, RTAs, and Real-time Monitoring. AEP has chosen to vote negative on this revised standard driven by the current lack of clarity in this regard.

The text “in accordance with” is subjective, and could be interpreted inconsistently across RE footprints as well as within RE footprints. For example, would the language from FAC-015-1 “equally limiting or more limiting than” be considered “in accordance with?”

AEP does not object to R1 as proposed, we believe that Transmission Operators should be afforded opportunity to provide input into the process, even if not specifically designated within the standard.

Likes 0

Dislikes 0

Response

With regards to R6: The SDT has updated the proposed FAC-011-4 R6 to clarify that RC’s SOL methodology shall include certain performance framework in determining SOL exceedance when performing Real-time monitoring, RTA, and OPA. The SDT also added a footnote that states “Stability evaluations and assessments of instability, Cascading, and uncontrolled separation can be performed using real-time stability assessments, predetermined stability limits or other offline analysis techniques”

The SDT has also proposed TOP-001-5 R25 and IRO-008-3 R7 to require both TOP and RC to utilize the RC’s SOL methodology in determining SOL exceedance when performing Real-time monitoring, RTA, and OPA.

With regards to the utilization of the phrase “In accordance with”: The SDT believes that the phrase “in accordance with” is commonly used in the approved NERC Reliability Standard

With regards to R1: The SDT believes that in both R1 and R4, RC has the authority to establish limits when it impacts wide area. In Requirement R5.3-R5.5, the RC is required to provide all necessary information to impacted TOP so that TOP will have the ability to review RC's determination of SOL

Richard Jackson - U.S. Bureau of Reclamation - 1

Answer

Document Name

Comment

None

Likes 0

Dislikes 0

Response

Laura Nelson - IDACORP - Idaho Power Company - 1

Answer

Document Name

Comment

None

Likes 0

Dislikes 0

Response



5. The original posting of FAC-015-1 included six requirements. Industry comments to this original version indicated significant concerns. In response to these concerns, the SDT attempted to streamline and clarify the intended interactions between relevant functional entities and to consolidate the standard into fewer requirements. To achieve this the SDT:

- Consolidated Requirements R1 – R5 in the original posting into three (R1 – R3) requirements,
- Clarified the roles of the Planning Coordinator and Transmission Planner in Requirements R1 – R3, and
- Clarified that Facility Ratings are “owner-provided” in Requirement R1.

The SDT acknowledges that some of the requirements in FAC-015-1 could alternatively be located within other standards such as TPL, MOD, etc.; however, the Project 2015-09 SAR does not currently authorize the SDT to modify those standards. The SDT is seeking feedback specific to the content of the requirement not where it should reside. Do you support the revised FAC-015-1? Please provide any other comments regarding FAC-015-1.

Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6

Answer

No

Document Name

Comment

FAC-015-1 R4 should more specifically state that each Planning Coordinator and Transmission Planner shall communicate any instability, Cascading or uncontrolled separation identified in either its Operational Planning Analysis or a Transfer Capability assessment in the Operations Horizon to each impacted Reliability Coordinator, Transmission Operator, Transmission Owner and Generation Owner. The current draft wording may be interpreted as requiring the Planning Coordinator and Transmission Planner to coordinate with the Reliability Coordinator for results of 5-year planning assessment, which is not only burdensome to TP/PC but also non-beneficial to the RC where RC focus is on 0-1 year horizon. As an additional comment, any new requirements put on a Near-Term Transmission Planning Horizon assessment or Transfer Capability assessment in the Planning Horizon would more appropriately reside in the respective Standards for those assessments, TPL-001 and MOD-001, not the new FAC-015-1.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. It would not be correct to refer to operational analysis performed by planning entities as this is not consistent with the requirements of these entities per the NERC Functional Model. Further, the language posted only requires levels of coordination of performance criteria and not the actual assessment.

The SDT has made further changes to withdraw FAC-015 and consolidate the intent of the previous 4 requirements into 3 requirements in a modified version of FAC-014

Don Schmit - Nebraska Public Power District - 5

Answer No

Document Name

Comment

NPPD supports the comments submitted by the MRO NSRF. In addition, NPPD recommends deleting the sub-bullets under FAC-015-1 R2 and R3. Less limiting performance criteria should not be an option.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. See response to MRO comment.

There are viable instances where planning entities may use less limiting criteria as documented in the posted rationale for this standard. Further, the standard requires a documented technical rationale from planners for these instances. It is the opinion of the SDT that not allowing these exceptions would not be consistent with the NERC Functional Model in that the RC does not have authority over planning entities.

Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer No

Document Name

Comment

The MRO NSRF understands the SDT isn't requesting industry input on the location of the requirements. However, to reduce the need for a future Standards Efficiency Review effort, the MRO NSRF requests the SDT to consider if the proposed FAC-015-1 altogether is needed or if its purpose can be fulfilled with existing standards and/or compliance monitoring processes as described below.

The Data Reporting Requirements in Attachment 1 of MOD-032-1 contains a tabular listing of *"information that is required to effectively model the interconnected transmission system for the Near-Term Transmission Planning Horizon and Long-Term Transmission Planning Horizon"*. It's also stated in the paragraph above the table *"A Planning Coordinator may specify additional information that includes specific information required for each item in the table below"*. Item 4c in the table is *ratings (normal and emergency)**. The asterisk refers to a note that states *"(Items marked with an asterisk indicate data that vary with system operating state or conditions. Those items may have different data provided for different modeling scenarios)*. It appears these statements along with Requirement R1 of TPL-001-4 establish a compliance expectation for models to *"represent projected system conditions"*, which should include the most limiting Facility Ratings applicable to the modeling scenario. Additionally, if Planning Coordinators, Transmission Planners, Transmission Operators and Reliability Coordinators are not all using the same set of Facility Ratings provided by the Transmission Owner in accordance with FAC-008 R8, then that inaccuracy can be addressed via compliance monitoring for FAC-014, TPL-001 and various IRO/TOP requirements. During its webinar regarding Project 2015-09, the SDT indicated that it would be a very rare occurrence where a Reliability Coordinator would have a more limiting rating than those already provided by Transmission Owners and available to Planning Coordinators and Transmission Planners. Therefore, where is the reliability gap that necessitates creation of Requirement R1 in FAC-015-1?

In a similar manner, if the compliance expectation in Requirements R5 and R6 of TPL-001-4 is for the Transmission Planner and Planning Coordinator to demonstrate a technically sound rationale for voltage and stability criteria applicable to the modeling scenario, then where is the reliability gap that necessitates creation of Requirements R2 and R3 in FAC-015-1?

To ensure relevant entities are considering the information described in FAC-015-1 Requirement R4, it could be added as sub-requirement in FAC-011-4 Requirement R4. To ensure those entities can get the information, it could be requested from the Planning Coordinator and Transmission Planner in accordance with TPL-001-4 Requirement R8. Therefore, is there a need for Requirement R4 in FAC-015-1?

Another consideration in lieu of the new FAC-015-1 standard is to develop compliance guidance, which can improve the industry's understanding of the importance and value in a consistent approach to aligning planning and operational limits.

However, If the SDT decides to proceed with FAC-015, then the MRO NSRF provides the following suggestions for improvement.

Since the FAC-015-1 R1, R2, and R3 obligate each Planning Coordinator and each Transmission Planner to develop SOLs that are equally limiting or more limiting than the Operations Planning Horizon SOLs, then FAC-014-3 Part 5.1 and Part 5.2 should be reworded to *“Each Planning Coordinator and each Transmission Planner within . . . ”*

The FAC-015-1 title does not match its stated purpose. We suggest “Coordination of System Planning Criteria and Methodologies with Reliability Coordinator SOL Methodology. The stated purpose of FAC-015-1 is to ensure that Facility Ratings, voltage limits, and stability criteria are coordinated with the Reliability Coordinator’s SOL methodology, but R4 is calls for providing selected Planning Assessment and Transfer Capability assessment results to Reliability Coordinators and Transmission Operators. We agree with obligating Planning Coordinators and Transmission Planners to communicate selected assessment results information with Reliability Coordinators and Transmission Operators, but propose that the obligations be added to the respective FAC-013 and TPL-001 standards, not FAC-015-1.

We believe that purpose of FAC-015 would be better fulfilled if it required Planning Coordinators and Transmission Planners to provide their planning horizon Facility Ratings, voltage limits, stability criteria, and methodologies (i.e. TPL-001-4 R5 and R6) to their applicable Reliability Coordinators. This would allow Reliability Coordinators to know what criteria and methodologies Planning Coordinators and Transmission Planners are using in Planning Assessments and better understand how their SOL Methodology might be adjusted to achieve better coordination with the planning horizon criteria and methodologies.

R1, R2, and R3 – We are skeptical that requiring Planning Coordinator and Transmission Planner system planning criteria and methodologies to be equally limiting or more limiting than Facility Ratings, voltage limits, and stability criteria derived from the Reliability Coordinator SOL methodologies is an appropriate coordination strategy.

R4 – The requirement calls for the communication of CEII information from Planning Assessments and Transfer Capability assessment to impacted Transmission Owners and Generator Owners. This obligation should not be included until it is verified that compliance with the FERC Standards of Conduct can be guaranteed.

Consider the following ideas for sub-parts of a requirement to communicate selected Planning Assessment and Transfer Capability assessment results.

R4.1 – The MRO NSRF agrees with including the type of identified instability but suggest revising the list of examples to match those listed in FAC-011-4 Part 4.1 “. . . (e.g. steady state voltage instability, transient overvoltage or undervoltage instability, unacceptable tie-line phase angle instability, generating unit loss of synchronism, unacceptable generating unit phase angle damping). Steady state voltage instability criteria can be a percentage of margin from the expected voltage collapse point in a P-V analysis. The term “voltage collapse” incorrectly implies that all Planning Coordinators and Transmission Planners choose the voltage collapse point in a P-V analysis as their voltage stability limit. FAC-011-4 changed “angular stability” to “unit stability”. “Transient voltage dip criteria violation” is not a type of instability. If “transient voltage dip criteria” is to be retained, then it should be included in R4.2, as an example of an “associated stability criteria” for voltage instability. “Angular instability” is a very broad type of instability. Consider providing the Planning Coordinator and Transmission Planner with more understanding of what types of specific angular instability by mentioning some specific sub-elements of the category like those suggested above.

R4.2 – Consider adding some stability criteria examples for the benefit of Planning Coordinators and Transmission Planners, such as steady state P-V curve criteria, steady state high and low voltage protective relay trip levels, transient voltage dip criteria, transient overvoltage spike criteria, transient high and low voltage protective relay trip levels, generating unit loss of synchronism criteria, generating unit phase angle damping criteria.

R4.3 – The MRO NSRF requests the SDT consider the following suggestions for clarification:

1.
 - Associated Contingencies and Facilities are two different items and should be two separate sub-sections.
 - The Contingencies used in Planning Assessments and Transfer Capability assessments include contingencies beyond the Contingencies used in Operational Planning Analysis.
 - “Facilities critical to . . .” does not have a clear meaning and uses the ‘loaded’ wording of “critical to”. Consider wording like, “The Elements that exceed the system performance criteria”.

R4.4 – No suggested wording change. However after Planning Coordinators and Transmission Planners describe the studied System conditions, it should explained that the System conditions, which will be used for Operational Planning Analysis, may be considerably different from the studies System conditions (e.g. different known outages, different load forecasts,

interchange with economic transfers, different generation resource dispatches), so the reliability impacts identified in the Operations Planning Horizon may be very different from those based on the Near-Term Planning Horizon System conditions.

R4.5 – The automatic controls and expected system operator actions that are expected to address potential instability, Cascading, or uncontrolled separation in the Operations Planning Horizon should be split into two sub-bullets or be split into two separate sub-sections.

- A sub-section for automatic control actions could say, “Automatic controls expected to address potential instability, Cascading, or uncontrolled separation available in the Operations Planning Horizon, such as Remedial Action Schemes (RASs), undervoltage load shedding (UVLS), underfrequency load shedding (UFLS).
- A sub-section for system operator actions could say, “Operating Procedures expected to address potential instability, Cascading, or uncontrolled.

R4.6 – We suggest that the wording be modified slightly to something like “Any Corrective Action Plans intended to mitigate or reduce identified instability, Cascading or uncontrolled separation.

Likes	0
Dislikes	0

Response

The SDT appreciates the comments. The SDT, through coordination with industry and regulatory stakeholders, made the determination that the requirements in the posted FAC-015 were necessary to accomplish the goal of retiring FAC-010. This determination was made because the original intent of FAC-010 and FAC-011 being a mechanism for planning and operating entities to coordinate SOL-related information was not properly accomplished. Therefore, it was necessary to modify the construct of the SOL standards to ensure planning and operations are adequately coordinating the performance criteria that is used in their respective studies.

Wording suggestions are duly noted. The SDT has consolidated the language contained in FAC-015 into a modified FAC-014.

Kayleigh Wilkerson - Lincoln Electric System - 5, Group Name Lincoln Electric System

Answer	No
--------	----

Document Name	
Comment	
<p>LES recommends the following changes to the bulleted list in FAC-015-1 R1.</p> <ul style="list-style-type: none"> • Bullet #1: Recommend removing the first bullet since it is not an exception to the RC’s SOL Methodology. • Bullet #2: Recommend revising the second bullet as follows to be more general and not associated with variations in ambient temperature assumptions only: “Facility Ratings differences are due to variations in seasonal assumptions such as in ambient temperature assumptions”. <p>Additionally, the reference to “Near-Term Transmission Planning Horizon” in R1-R3 should only refer to the Planning Assessment with the Near-Term removed. For example, in R1 the required PC/TP process would likely not specify different Facility Ratings between the Near-Term versus Long-Term planning horizons. Use of the phrase “Near-Term Transmission Planning Horizon” in R4 seems appropriate.</p>	
Likes	0
Dislikes	0
Response	
<p>The SDT appreciates the comments. Wording suggestions are duly noted. The SDT has consolidated the language contained in FAC-015 into a modified FAC-014.</p>	
Patti Metro - National Rural Electric Cooperative Association - 3,4	
Answer	No
Document Name	
Comment	
<p>NRECA agrees with the consolidation of requirements and the other changes in the proposed FAC-015-1.</p>	

As stated in Q4, NRECA believes that the drafting team is not exercising its due diligence by not considering a revised SAR for this project to not only include the TOP and IRO standards, but to also expand the review to include TPL and MOD standards.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT considered and explored all avenues to place requirements in the correct families of Reliability Standards. Ultimately, through exhaustive discussions/debates with industry and regulatory stakeholders, the decision was made to retain the notion of coordination of SOL-related performance criteria between planning and operating entities in the FAC family of Reliability Standards.

Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECl

Answer No

Document Name

Comment

AECl supports comments provided by NRECA.

NRECA agrees with the consolidation of requirements and the other changes in the proposed FAC-015-1.

As stated in Q4, NRECA believes that the drafting team is not exercising its due diligence by not considering a revised SAR for this project to not only include the TOP and IRO standards, but to also expand the review to include TPL and MOD standards.

Likes 0

Dislikes 0

Response

See response to NRECA comment.

Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	No
Document Name	
Comment	
<p>The use of the undefined term 'instability' in R4.4 could lead to inconsistent results and result in additional compliance burdens that add little to no reliability benefit. As used in FAC-011 R6, instability is not limited to the BES or wide area but instead, as currently worded, applies to ANY instability that has ANY impact to any element or facility. R4.4 should be limited to the interconnection or at the very least the wide-area to prevent misunderstanding.</p>	
Likes	0
Dislikes	0
Response	
<p>The SDT appreciates the comments. The SDT has consolidated the language contained in FAC-015 into a modified FAC-014. The use and scope of instability in the requirement referenced in the comment is consistent with the use of the term in the current IROL definition.</p>	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
<p>See comments under question 6 for additional rationale. BPA would like to see R4 modified to state:</p> <p>R4. Each Planning Coordinator and each Transmission Planner shall communicate any instability, Cascading or uncontrolled separation <i>“that adversely impact the reliability of the interconnection or other Reliability Coordinator Area(s)”</i> identified in either its Planning Assessment of the Near-Term Transmission Planning Horizon or its Transfer Capability assessment</p>	

(Planning Coordinator only) to each impacted Reliability Coordinator, Transmission Operator, Transmission Owner, and Generation Owner. This communication shall include: [Violation Risk Factor: Medium] [Time Horizon: Longterm Planning]

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. Wording suggestions are duly noted. The SDT has consolidated the language contained in FAC-015 into a modified FAC-014. The inclusion of the terminology suggested in the comment has been implemented.

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1

Answer No

Document Name

Comment

MEC supports the MRO NSRF recommendation to SDT “to consider if the proposed FAC-015-0 altogether is needed”. The general feeling within numerous industry’s entities is that there is a risk of “over-regulation” as numerous additional requirements within various families of NERC Standards attempt to regulate aspects of the industry in a “micro-managing” manner. That leads to duplication and difficulties regarding interpretation of requirements.

Likes 0

Dislikes 0

Response

See response to MRO comment.

Sing Tay - OGE Energy - Oklahoma Gas and Electric Co. - 6, Group Name OKGE

Answer No

Document Name

Comment

OKGE agrees with the MRO NSRF recommendation to SDT “to consider if the proposed FAC-015-0 altogether is needed or if its purpose can be fulfilled with existing standards and/or compliance monitoring processes”.

Likes 0

Dislikes 0

Response

See response to MRO comment.

Joe O'Brien - NiSource - Northern Indiana Public Service Co. - 6

Answer

No

Document Name

Comment

See MRO NSRF comments.

Likes 0

Dislikes 0

Response

See response to MRO comment.

Andy Fuhrman - Andy Fuhrman On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Andy Fuhrman

Answer

No

Document Name

Comment

See MRO NERC Standards Review Forum comments.

Likes 0

Dislikes 0

Response

See response to MRO comment.

Michael Cruz-Montes - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE

Answer No

Document Name

Comment

CenterPoint Energy does not believe FAC-015-1 is necessary and asks the SDT to reconsider whether the standard is needed at all. CenterPoint Energy believes any reliability concern regarding the proper use of SOLs is addressed by existing standards such as FAC-008, FAC-014, MOD-032, and TPL-001. Additionally, the proper communication of SOLs is addressed by existing standards such as IRO-010, IRO-014, and TOP-003.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT, through coordination with industry and regulatory stakeholders, made the determination that the requirements in the posted FAC-015 were necessary to accomplish the goal of retiring FAC-010. This determination was made because the original intent of FAC-010 and FAC-011 being a mechanism for planning and operating entities to coordinate SOL-related information was not properly accomplished. Therefore, it was necessary to modify the construct of the SOL standards to ensure planning and operations are adequately coordinating the performance criteria that is used in their respective studies.

The SDT has abandoned the proposal for FAC-015 as a separate standard and has consolidated the requirements into a modified version of FAC-014.

Oliver Burke - Entergy - Entergy Services, Inc. - 1

Answer No

Document Name

Comment

Entergy supports the comments submitted by MRO NSRF.

Likes 0

Dislikes 0

Response

See response to MRO comment.

Kelsi Rigby - APS - Arizona Public Service Co. - 5

Answer No

Document Name

Comment

FAC-015-1 R4.1 should be limited to TPL-001-4 P1-P7 events. Regarding FAC-015-1 R4.5, TPL-001-4 requires that studies are run with RAS, and if no instability is found, then no additional stability studies are run to determine if RAS was needed to maintain the stability. Also, when a RAS is established, the reason for establishing the RAS (i.e., to address instability or thermal problems) is known. FAC-015-1 R4.5 as written would require additional studies in order to determine whether the RAS is needed to maintain stability, and there is no justification for this additional work because the information would not provide any value. Further, TPL-001-4 P1-P7 events do not permit the use of Under Voltage Load Shedding and Under Frequency Load Shedding to address instability, cascading, or uncontrolled separation, which is referenced in FAC-015-1 R4.5. For this reason, AZPS recommends that those actions not be included in FAC-015-1 R4.5.

Each requirement of FAC-015-1 appears to already be included in existing standards, or should be incorporated into existing standards as opposed to creating a new standard. The content of FAC-015-1 R1 should be included in MOD-032. The content of FAC-015-1 R2 and R3 should be included in TPL-001. The Planning Assessment requirements referenced in FAC-015-1 R4 should be incorporated into TPL-001-4, and the Transfer Capability Assessment requirements referenced in FAC-015-1 R4 should be incorporated into FAC-013-3 R5. AZPS urges a change in SAR scope or a new SAR to review all of the affiliated requirements and determine whether there is overlap or potential concern with creating a new standard.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. Planning Events is the intended focus of the standard proposal. There is no requirement for additional studies to be performed per FAC-015 as the comment suggests.

The SDT considered and explored all avenues to place requirements in the correct families of Reliability Standards. Ultimately, through exhaustive discussions/debates with industry and regulatory stakeholders, the decision was made to retain the notion of coordination of SOL-related performance criteria between planning and operating entities in the FAC family of Reliability Standards.

The SDT has abandoned the proposal for FAC-015 as a separate standard and has consolidated the requirements into a modified version of FAC-014.

Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1

Answer

No

Document Name

Comment

PNM believes that allowing a justified exception will still result in a gap between planning and operations and considers this standard, as written, as an additional administrative burden on the PA without having an impact on reliability. Instead of allowing exceptions, PNM suggest that the RC, TOP, and PA should jointly develop system performance criteria.

Likes	0
Dislikes	0
Response	
<p>The SDT appreciates the comments. Through substantial discussions with industry and regulatory stakeholders, the SDT did not pursue a generic requirement for the entities to coordinate with each other because of the lack of clarity with such a requirement. Rather, the coordination of planning performance criteria with operating performance criteria was determined to be a much more appropriate method to ensure the desired communication occurred. This change removes some of the reliability gaps in the current version of the standards because it requires enhanced communication practices between planning and operating entities.</p>	
Kevin Salsbury - Berkshire Hathaway - NV Energy - 5	
Answer	No
Document Name	
Comment	
<p>NV Energy shares the industry recommendation to SDT “to consider if the proposed FAC-015-0 altogether is needed”. The general feeling within numerous industry’s entities is that there is a risk of “over-regulation” as numerous additional requirements within various families of NERC Standards attempt to regulate aspects of the industry in a “micro-managing” manner. That leads to duplication and difficulties regarding interpretation of requirements.</p>	
Likes	0
Dislikes	0
Response	
<p>The SDT appreciates the comments. The SDT considered and explored all avenues to place requirements in the correct families of Reliability Standards and to limit unnecessary requirements. Ultimately, through exhaustive discussions/debates with industry and regulatory stakeholders, the decision was made to retain the notion of coordination of SOL-related performance criteria between planning and operating entities in the FAC family of Reliability Standards.</p>	

The SDT has abandoned the proposal for FAC-015 as a separate standard and has consolidated the requirements into a modified version of FAC-014. There is no intent to “micro-manage” the industry. The intent is to ensure that operational and planning studies are better coordinated through the use of complimentary performance criteria.

Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

While we agree with consolidating requirements, we disagree with the approach of the SDT to include requirements R1-R3 in FAC-015. The SDT should consider revising the SAR to include modifications to TPL or MOD standards. The SDT should not go forward with FAC-015 until they have reviewed TPL or MOD alternatives.

Likes 0	
---------	--

Dislikes 0	
------------	--

Response

The SDT appreciates the comments. The SDT considered and explored all avenues to place requirements in the correct families of Reliability Standards. Ultimately, through exhaustive discussions/debates with industry and regulatory stakeholders, the decision was made to retain the notion of coordination of SOL-related performance criteria between planning and operating entities in the FAC family of Reliability Standards.

The SDT has abandoned the proposal for FAC-015 as a separate standard and has consolidated the requirements into a modified version of FAC-014.

Anton Vu - Los Angeles Department of Water and Power - 6

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

There are duplicate of work between this standard and MOD which creates a confusion.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. Facility Rating information is part of the steady state data requirements of MOD-032. This data is provided by the owner for use in planning and, ultimately operational models. The intent is for the ratings that are provided by the owner to be used consistently between planning and operations. For example, an owner may provide several time-limited Emergency Ratings. If the RC only operates to a 30-minute Emergency rating, planning should not plan the system to a 15-minute Emergency Rating. There is no current provision for this instance in the MOD standards.

Tommy Drea - Dairyland Power Cooperative - 5

Answer No

Document Name

Comment

DPC supports the comments of MRO NSRF.

Likes 0

Dislikes 0

Response

See response to MRO comment.

Glenn Barry - Los Angeles Department of Water and Power - 5

Answer No

Document Name

Comment

There are duplicate work between this standard and MOD which creates confusion.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. Facility Rating information is part of the steady state data requirements of MOD-032. This data is provided by the owner for use in planning and, ultimately operational models. The intent is for the ratings that are provided by the owner to be used consistently between planning and operations. For example, an owner may provide several time-limited Emergency Ratings. If the RC only operates to a 30-minute Emergency rating, planning should not plan the system to a 15-minute Emergency Rating. There is no current provision for this instance in the MOD standards.

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

Answer

No

Document Name

Comment

The SPP Standards Review Group (SSRG) understands that the current Standards Authorization Request (SAR) doesn't provide the authority to revise the TPL, MOD, etc. standards that have a potential affiliation with FAC-015. Notwithstanding, the SSRG recommends that the drafting team consider that FAC-015 data requirements are redundant with other families of standards and, therefore, provide no additional reliability benefit but add additional compliance risk to responsible entities. For example, MOD-32-1 and TPL-001-4 Requirements both require data provisions that overlap with FAC-015.

Additionally, the SSRG recommends coordinated efforts with the Standards Efficiency Review (SER) Team to see if those particular standards can be modified in the Phase II of the SER without having to revise the current SAR. The SSRG understands that Phase II of the SER is dedicated to Requirements that could be combined and/or modified. From our perspective, this coordinated effort will provide value and efficiencies to both projects by identifying and removing redundancy issues.

Finally, the SSRG, while recognizing the IROL is not a part of the current comment period, suggests that during Phase II of the project the drafting team re-evaluate the use of references to Planning Assessments of the Near-Term Transmission Planning Horizon that show results of “instances of instability, Cascading, or uncontrolled separation.” The SSRG is concerned that the drafting team may have inadvertently omitted how this reference includes TPL-001-4 Table 1 Extreme Events, as well as Planning Events. The SSRG recommends that the drafting team either clarify that the proposed replacement language for IROLs in associated Reliability Standards, as well as FAC-015-1, is only referring to TPL-001-4 Table 1 Planning Events, or, explicitly direct the planning entities to document those Extreme Events that cause instances of instability, Cascading, or uncontrolled separation if they are not specifically identified in Planning Assessments.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT considered and explored all avenues to place requirements in the correct families of Reliability Standards. Ultimately, through exhaustive discussions/debates with industry and regulatory stakeholders, the decision was made to retain the notion of coordination of SOL-related performance criteria between planning and operating entities in the FAC family of Reliability Standards.

The intent of the requirements in the posted FAC-015 is to include planning events only. Additional wording has been added in current versions of the SDT’s proposal.

Spencer Tacke - Modesto Irrigation District - 4

Answer

No

Document Name

Comment

The planning horizon should be allowed to have more limiting element ratings than the operating horizon, for more reasons than the ones stated in R1.

Likes	0
Dislikes	0
Response	
The SDT appreciates the comments. The SDT agrees and feels the technical rationale referenced in the standard can document these instances.	
Colby Bellville - Duke Energy - 1,3,5,6 - FRCC,SERC,RF, Group Name Duke Energy	
Answer	No
Document Name	
Comment	
<p>Duke Energy is unclear on the expectations listed in the sub-bullets for R1. Can a PC or TP use a less limiting Facility Rating with the justification of one of the sub-bullets, or do all sub-bullets need to be satisfied in order to use a less limiting Facility Rating? The use of the word “or” in the 3rd bullet adds to the confusion. If the intent is that only one sub-bullet must be satisfied, we suggest the following:</p> <p><i>“The process may allow the use of less limiting Facility Ratings due to one of the following:”</i></p> <p>Also, the second sub-bullet is not clear on where the ambient temperature assumptions are coming from. Would this be referencing a difference between Planning and Operations?</p>	
Likes	0
Dislikes	0
Response	
The SDT appreciates the comments. The source for the confusion is unclear. The word “or” was included to make clear that all bullets do not need to apply for an instance. Additionally, the technical rationale is at the discretion of the planner and is to be utilized to document any needed exceptions (including bulleted items or any others the planner deems appropriate).	
faranak sarbaz - Los Angeles Department of Water and Power - 1	
Answer	No

Document Name	
Comment	
There are duplicate of work between this standard and MOD which creates a confusion.	
Likes	0
Dislikes	0
Response	
The SDT appreciates the comments. Facility Rating information is part of the steady state data requirements of MOD-032. This data is provided by the owner for use in planning and, ultimately operational models. The intent is for the ratings that are provided by the owner to be used consistently between planning and operations. For example, an owner may provide several time-limited Emergency Ratings. If the RC only operates to a 30-minute Emergency rating, planning should not plan the system to a 15-minute Emergency Rating. There is no current provision for this instance in the MOD standards.	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no Dominion, Con Ed and NBPower	
Answer	No
Document Name	
Comment	
<i>Requirement 1</i>	
<i>The intent of Requirement 1 stated in the Rationale for FAC-015-1 “is not to change, limit, or modify Facility Ratings determined by the equipment owner per FAC-008. The intent is to utilize those owner-provided Facility Ratings such that the System is planned to support the reliable operation of that System.” Requiring the Planning Coordinator to change ratings to what is provided to the Reliability Coordinator is contrary to established NERC criteria.</i>	
<i>The requirement as written would require planning to use different ratings than what is provided for the purposes of planning under MOD-032-1 and FAC-008-3 which is contrary to the stated purpose of the standard. As the Transmission Owners are already obligated to provide</i>	

planning and operating ratings under FAC-008-3 and MOD-032-1, the burden of establishing a technical justification for potentially different ratings used in planning and operations should be placed upon Functional Entities who own facilities (such as Transmission or Generation).

Requirement 2

The rationale provided for Requirement #2 has strong ties to NERC TPL-001. The intent of this requirement is to try and ensure that Planning is fulfilling its role to determine potential reliability deficiencies of the future planned system and to develop Corrective Action Plans to resolve the reliability concerns. This requirement is viewed as a supplement of TPL-001-4 R5.

The voltage requirements stated in TPL-001-4 R5 essentially state that Planning TPL assessments need to have criteria (and document that criteria) for:

- Acceptable system steady state voltage limits
 - Post-contingency voltage deviations
 - Transient voltage response
- o For this criteria at minimum the criteria need to specify a low voltage level and maximum length of time that the transient voltages may remain below that level.

The idea to implement R2 would be to state our requirements as exactly what is put forward in the RC SOL methodology. In reviewing the criteria for the RC SOL methodology, the above criteria for the TPL standard are all achieved with the exception of post-contingency voltage deviation.

Our recommendation would be that FAC-011-4 R4 list include criteria for post-contingency voltage deviation.

Requirement 3

While the rationale provided for Requirement #3 attempts to have ties to NERC TPL-001, no specific requirement of the TPL standard is identified (like there is in FAC-015-1 R2's rationale).

Requirement 4

The rationale for R4 does not provide justification for the inclusion of Transfer Capability Assessments to be included in this requirement. NERC should clarify as to how referencing to FAC-013 plays a role in the requested communication in FAC-015 R4. Further, if the Transfer Capability Assessment respects known SOLS (R1.2) there would be no reporting in FAC-015 regarding Transfers. Further FAC-015 R4.6 requires discussion of corrective action plans which are not required as part of the Assessment of Transfer Capability.

It seems that their argument for rationalizing this standard is circular to existing standards. For example, the rationale states, "the details required by Requirement R4 will supplement the severe system conditions identified in Requirements R4 Parts 4.4 and 45 of the TPL-001-4". The TPL standard requires that entities evaluate the events that may produce the more severe system impacts. It is unclear about how reporting this information per the FAC-015 standard will improve the TPL assessments. It is also unclear how this information in the near-term planning horizon will benefit the entities to which this information is provided. Instead, when violations are observed in the Planning Horizon, corrective Action Plans should be developed which resolve the violation.

Likes	0
Dislikes	0

Response

The SDT appreciates the comments. Regarding the comment on Facility Ratings: The SDT proposal does not change the requirements for owners to provide Facility Ratings per FAC-008 and does not change the PC and TP responsibilities per MOD-032. The intent is for performance criteria between planning and operations to be better coordinated. For example, an owner may provide several time-limited

Emergency Ratings. If the RC only operates to a 30-minute Emergency rating, planning should not plan the system to a 15-minute Emergency Rating. There is no current provision for this instance in the MOD standards.

Laura McLeod - NB Power Corporation - 5

Answer

No

Document Name

Comment

Disagree with the RC methodology in FAC-014-3 and therefore by extension disagree with the TP and PC using the proposed RC methodology.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments.

Brandon McCormick - Brandon McCormick On Behalf of: Carol Chinn, Florida Municipal Power Agency, 6, 4, 3, 5; Chris Gowder, Florida Municipal Power Agency, 6, 4, 3, 5; David Owens, Gainesville Regional Utilities, 3, 1, 5; Don Cuevas, Beaches Energy Services, 1, 3; Ginny Beigel, City of Vero Beach, 3; Joe McKinney, Florida Municipal Power Agency, 6, 4, 3, 5; Ken Simmons, Gainesville Regional Utilities, 3, 1, 5; Neville Bowen, Ocala Utility Services, 3; Randy Hahn, Ocala Utility Services, 3; Richard Montgomery, Florida Municipal Power Agency, 6, 4, 3, 5; Steven Lancaster, Beaches Energy Services, 1, 3; Tom Reedy, Florida Municipal Power Pool, 6; - Brandon McCormick, Group Name FMPA

Answer

No

Document Name

Comment

While we appreciate the constraints the SAR places on the SDT, FMPA cannot support FAC-015-1. FMPA still questions if R1-R3 of the proposed FAC-015-1 is even necessary. From the previous comment period: "We question what the value of R1-R3 is and if the

requirements are even needed. R1-R3 are really dealing with TPL-001-4 and there shouldn't be three additional requirements in FAC-015-1 to deal with the uncommon occurrence of a PC using less limiting Facility Ratings, System steady-state voltage limits, or stability performance criteria. It certainly shouldn't require a technical justification, it should only require coordination"

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT considered and explored all avenues to place requirements in the correct families of Reliability Standards and to limit unnecessary requirements. Ultimately, through exhaustive discussions/debates with industry and regulatory stakeholders, the decision was made to retain the notion of coordination of SOL-related performance criteria between planning and operating entities in the FAC family of Reliability Standards.

Douglas Johnson - American Transmission Company, LLC - 1

Answer

No

Document Name

Comment

The FAC-015-1 title does not match its stated purpose. We suggest "Coordination of System Planning Criteria and Methodologies with Reliability Coordinator SOL Methodology.

The stated purpose of FAC-015-1 is to ensure that Facility Ratings, voltage limits, and stability criteria are coordinated with RC SOL Methodology, but R4 is calls for providing selected Planning Assessment and Transfer Capability assessment results to RCs and TOPs. We agree with obligating PCs and TPs to communicate selected assessment results information with RCs and TOPs, but propose that the obligations be added to the respective FAC-013 and TPL-001 standards, not FAC-015-1.

We believe that purpose of FAC-015 would be better fulfilled if it required PCs and TPs to provide their planning horizon Facility Ratings, voltage limits, stability criteria, and methodologies (i.e. TPL-001-4 R5 and R6) to their applicable RCs. This would allow RCs to know what criteria and methodologies PCs and TPs are using in Planning Assessments and better understand how their SOL Methodology might be adjusted to achieve better coordination with the planning horizon criteria and methodologies.

R1, R2, and R3 – We are skeptical that requiring PC and TP system planning criteria and methodologies to be equally limiting or more limiting than Facility Ratings, voltage limits, and stability criteria derived from RC SOL Methodologies is an appropriate coordination strategy.

In addition, for R2 and R3, note that edits are needed to these requirements if they will be retained. Specifically, the "stability performance" and "System steady-state voltage" language in each of the sub-bullets of R2 and R3 are reversed (i.e. "stability performance" should appear in R3 and "System steady-state voltage" should appear in R2).

R4 – The requirement calls for the communication of CEII information from Planning Assessments and Transfer Capability assessment to impacted Transmission Owners and Generator Owners. This obligation should not be included until it is verified that compliance with the FERC Standards of Conduct can be guaranteed.

Consider the following ideas for sub-parts of a requirement to communicate selected Planning Assessment and Transfer Capability assessment results.

4.1 We agree with including the type of identified instability but suggest revising the list of examples to match those listed in FAC-011-4 Part 4.1 “. . . (e.g. steady state voltage instability, transient voltage response instability, unit instability, System damping). Steady state voltage instability criteria can be a percentage of margin from the expected voltage collapse point in a P-V analysis. The term “voltage collapse” incorrectly implies that all PCs and TPs choose the voltage collapse point in a P-V analysis as their voltage stability limit. FAC-011-4 changed “angular stability” to “unit stability”. “Transient voltage dip criteria violation” is not a type of instability, but rather a reference to a type of criteria, which should be cited in Part 4.2.

4.2 Consider adding some stability criteria examples for the benefit of PCs and TPS, such as steady state P-V curve criteria, steady state high and low voltage protective relay trip levels, transient voltage dip criteria, transient overvoltage spike criteria, transient high and low voltage protective relay trip levels, generating unit loss of synchronism criteria, generating unit phase angle damping criteria.

4.3 Consider the following suggestions:

- Associated Contingencies and Associated Facilities are two different items and should be split into two separate sub-sections.
- The Contingencies used in Planning Assessments and Transfer Capability assessments include contingencies beyond the Contingencies used in Operational Planning Analysis.

- “Facilities critical to . . .” does not have a clear meaning and uses the ‘loaded’ wording of “critical to”. Consider wording like, “The Elements that exceed the system performance criteria”.

4.4 No suggested wording change. However after PCs and TPs describe the studied System conditions, it should explained that the System conditions, which will be used for Operational Planning Analysis, may be considerably different from the studies System conditions (e.g. different known outages, different load forecasts, interchange with economic transfers, different generation resource dispatches), so the reliability impacts identified in the Operations Planning Horizon may be very different from those based on the Near-Term Planning Horizon System conditions.

4.5 The automatic controls and expected system operator actions that are expected to address potential instability, Cascading, or uncontrolled separation in the Operations Planning Horizon should be split into two sub-bullets or be split into two separate sub-sections.

- A sub-section for automatic control actions could say, “Automatic controls expected to address potential instability, Cascading, or uncontrolled separation available in the Operations Planning Horizon, such as Remedial Action Schemes (RASs), undervoltage load shedding (UVLS), underfrequency load shedding (UFLS).

- A sub-section for system operator actions could say, “Operating Procedures expected to address potential instability, Cascading, or uncontrolled.

4.6 We suggest that the wording be modified slightly to something like “Any Corrective Action Plans intended to mitigate or reduce identified instability, Cascading or uncontrolled separation.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT has consolidated the requirements in the posted FAC-015 into a modified FAC-014. There are several supplemental changes to other Reliability Standards that may address some of the other above comments.

David Jendras - Ameren - Ameren Services - 3

Answer

No

Document Name

Comment

We agree that transmission owner-provided Facility (thermal) Ratings should be used in R1 and that the ratings of existing facilities should be coordinated between RC, PC, and TP entities to ensure system model accuracy. Thermal ratings of future facilities planned for the near-term planning horizon would not be coordinated with the RC as these facilities do not exist in the operating horizon.

As proposed, the use of System Voltage Limits described in R2 and stability performance criteria described in R3 would not require coordination between entities, but would be based on the RC methodology and not on local TO planning criteria, which has been filed with FERC and the States. The use of more stringent limits set by the RC would provide the means to unilaterally drive the planning assessment results developed by the PC and TP and could force significant future system expansion above existing planned levels. In our opinion, the language in R2 and R3 needs to be changed to require a more collaborative use of PC and TP existing planning criteria with the RC methodology.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT understands the issue of planned Facilities and their ratings not being included in operational assumptions. This is obviously an allowable exception to the requirements in the standard as stated in the requirement and associated rationale.

TO planning criteria is unclear. The Transmission Owner is not a planning entity in the NERC Functional Model.

Neil Swearingen - Salt River Project - 1,3,5,6 - WECC

Answer

No

Document Name

Comment

SRP agrees with the clarification of “owner-provided” Facility Ratings and restructuring of the requirements. However, SRP has concerns with the language found in R1, R2 and R3. In each of these requirements, the Transmission Planner or Planning Coordinator may use less limiting criteria, limits or ratings if they provide technical rationale to affected Transmission Planners, Planning Coordinators or Reliability Coordinators. SRP is concerned because there is no requirement for the affected entities to agree with the technical rationale. In addition, technical rationale is not a NERC defined term so SRP is concerned with what will be considered technical rationale and what will not. What happens if there is a disagreement between the Transmission Planner and the affected entity as to the technical rationale that was used?

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The entities the technical rationale is distributed to do not have authority over the planning entities per the NERC Functional Model so it would not be appropriate to allow for an approval of the rationale. The technical rationale does not have to be a NERC defined term and is up to the discretion of the entity creating the document.

Allie Gavin - Allie Gavin On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Allie Gavin

Answer

No

Document Name

Comment

ITC agrees with MEC and the MRO NSRF recommendations to SDT “to consider if the proposed FAC-015-0 altogether is needed”. The general feeling within numerous industry’s entities is that there is a risk of “over-regulation” as numerous additional requirements within various families of NERC Standards attempt to regulate aspects of the industry in a “micro-managing” manner. That leads to duplication and difficulties regarding interpretation of requirements.

The Data Reporting Requirements in Attachment 1 of MOD-032-1 contains a tabular listing of “*information that is required to effectively model the interconnected transmission system for the Near-Term Transmission Planning Horizon and Long-Term Transmission Planning Horizon*”. It’s also stated in the paragraph above the table “*A Planning Coordinator may specify additional information that includes specific*

information required for each item in the table below". Item 4c in the table is *ratings (normal and emergency)**. The asterisk refers to a note that states "*(Items marked with an asterisk indicate data that vary with system operating state or conditions. Those items may have different data provided for different modeling scenarios)*". It appears these statements along with Requirement R1 of TPL-001-4 establish a compliance expectation for models to "*represent projected System conditions*", which should include the most limiting Facility Ratings applicable to the modeling scenario. Additionally, if Planning Coordinators, Transmission Planners, Transmission Operators and Reliability Coordinators are not all using the same set of Facility Ratings provided by the Transmission Owner in accordance with FAC-008 R8, then that inaccuracy can be addressed via compliance monitoring for FAC-014, TPL-001 and various IRO/TOP requirements. During its webinar regarding Project 2015-09, the SDT indicated that it would be a very rare occurrence where a Reliability Coordinator would have a more limiting rating than those already provided by Transmission Owners and available to Planning Coordinators and Transmission Planners. Therefore, where is the reliability gap that necessitates creation of Requirement R1 in FAC-015-1?

In a similar manner, if the compliance expectation in Requirements R5 and R6 of TPL-001-4 is for the Transmission Planner and Planning Coordinator to demonstrate a technically sound rationale for voltage and stability criteria applicable to the modeling scenario, then where is the reliability gap that necessitates creation of Requirements R2 and R3 in FAC-015-1?

R1, R2, and R3 – We are skeptical that requiring Planning Coordinators and Transmission Planners system planning criteria and methodologies to be equally limiting or more limiting than Facility Ratings, voltage limits, and stability criteria derived from the Reliability Coordinator SOL methodologies is an appropriate coordination strategy. They also require a documentation burden that may ultimately be eliminated in a later NERC Standards Efficiency Review.

Requirement 4 should not be included in a FAC standard. The TPL standard already provides a provision for anyone with a reliability need to obtain the TPL Assessment. Any of these entities must request the TPL Assessment from the PC or TP and identify the reliability need. They must also demonstrate that they can maintain that the communication of CEII information is not outside the bounds of the FERC Standards of Conduct. R4 provides far too much of an open ended list of information on the transmission system and does not guarantee the required confidentiality.

Finally, ITC, while recognizing the IROL is not a part of the current comment period, suggests that during Phase II of the project the drafting team re-evaluate the use of references to Planning Assessments of the Near Term Transmission Planning Horizon that show results of “instances of instability, Cascading, or uncontrolled separation.” ITC is concerned that the drafting team may have inadvertently omitted how this reference includes TPL-001-4 Table 1 Extreme Events, as well as Planning Events. ITC recommends that the drafting team either clarify that the proposed replacement language for IROLs in associated Reliability Standards, as well as FAC-015-1, is only referring to TPL-001-4 Table 1 Planning Events. If it were to explicitly have the planning entities include and document those Extreme Events that cause instances of instability, Cascading, or uncontrolled separation if they are not specifically identified in Planning Assessments, this list would most likely be extremely long and cause issues for planning entities in their completion of all associated studies.

Likes 0

Dislikes 0

Response

See response to MRO comment.

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer

No

Document Name

Comment

Texas RE is concerned with the use of a technical rationale to use less limiting Facility Ratings (R1), less limiting System Voltage Limits (R2), and less limited stability performance criteria (R3). There is nothing that states what should go into the technical rationale, who should determine whether or not the technical rationale provides a valid reason for not using the most limiting factor, and what shall occur if the technical rationale is not valid. As written, an entity could put any reason whatsoever for not using the most limiting factor and have no consequence if it is not a valid reason.

Texas RE strongly recommends there be some sort of criteria for a technical rationale, it go through an approval process, and, if not approved, it be sent back to the entity who submitted the technical rationale. At the very least, the technical rationale should explain how reliability is or is not impacted.

Texas RE has the following additional comments regarding Requirement R1:

- PCs and TPs should request facility owners to provide ratings based on the ambient temperature assumptions in the Planning Assessments, and for each ambient temperature assumption in the Planning Assessment, the PCs and TPs should not be able to use a rating which is less limiting than the corresponding owner-provided Facility Rating.
- Higher Facility Ratings for a planned upgrade or addition should only be allowed to be utilized in studies the year the upgrade or addition is expected to be in service and for following years. Facility Rating increases that are only proposed as part of a Corrective Action Plan should not be used in the analysis performed to determine if the System meets performance requirements in Table 1 of TPL-001-4, but may be used to address deficiencies identified as part of the analysis.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The NERC Functional Model does not indicate operating entities having authority over planning entities. Therefore, the notion of approval is not supported by the NERC Functional Model in the opinion of the SDT.

Gregory Campoli - New York Independent System Operator - 2

Answer

No

Document Name

Comment

IRC Standards Review Committee understands that the current Standards Authorization Request (SAR) doesn't provide the authority to revise the TPL, MOD, etc. standards that have a potential affiliation with FAC-015. Notwithstanding, the SRC recommends that the drafting team consider that FAC-015 data requirements are redundant with other families of standards and, therefore, provide no additional

reliability benefit but add additional compliance burden to responsible entities. For example, MOD-32-1 and TPL-001-4 Requirements both require data provisions that overlap with FAC-015.

Since the SDT for this Project recognized that there might be a better placement of the Project Requirements, yet apparently felt that a process to consider addressing Standards other than those in the Project’s SAR was not available, NERC should consider a process to allow expediting revised SARs that would enable the SDT to address Standards that were not contemplated in the original SAR, while the Project is ongoing.

The IRC would also like to note that the Standard Efficiency Review Project has made similar observations with respect to consolidation of or better coordination of standards. We would suggest that the SDT work with NERC Staff to follow the approach and principles of the SER team to ensure those efficiencies are realized on this project.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT considered and explored all avenues to place requirements in the correct families of Reliability Standards and to limit unnecessary requirements. Ultimately, through exhaustive discussions/debates with industry and regulatory stakeholders, the decision was made to retain the notion of coordination of SOL-related performance criteria between planning and operating entities in the FAC family of Reliability Standards.

Robert Blackney - Edison International - Southern California Edison Company - 1,3,5,6 - WECC

Answer

No

Document Name

Comment

SCE agrees with the MRO NSRF (and MidAmerican) recommendation for the SDT “to consider if the proposed FAC-015-0 altogether is needed”. The general feeling within numerous industry’s entities is that there is a risk of “over-regulation” as several NERC Standards attempt to regulate aspects of the industry in a “micro-managing,” or duplicative manner.

Likes 0

Dislikes 0

Response

See response to MRO comment.

William Sanders - Lower Colorado River Authority - 1

Answer

No

Document Name

Comment

FAC-015 creates a sort of double jeopardy for the Transmission Planner by placing the requirement of establishing a process on top of the requirements set out in FAC-001, FAC-007, FAC-011, FAC-014, MOD-032 and MOD-033 to establish and communicate the limits and should not be applicable to entities that already have the requirement to produce and use this data in analysis required by other NERC Reliability Requirements such as TPL-001.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. It is unclear how FAC-001 and MOD-033 is applicable.

FAC-007 is not subject to current or future enforcement.

FAC-011 applies to the RC.

FAC-014 is being coordinated with the changes to FAC-010, FAC-011, and FAC-015. The updated plan is to consolidate the requirements in the posted FAC-015 into a modified FAC-014.

Regarding the MOD-032 comment: The SDT proposal does not change the requirements for owners to provide Facility Ratings per FAC-008 and does not change the PC and TP responsibilities per MOD-032. The intent is for performance criteria between planning and operations to be better coordinated. For example, an owner may provide several time-limited Emergency Ratings. If the RC only operates to a 30-minute Emergency rating, planning should not plan the system to a 15-minute Emergency Rating. There is no current provision for this instance in the MOD standards.

Eric Shaw - Eric Shaw On Behalf of: Lee Maurer, Oncor Electric Delivery, 1; - Eric Shaw

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

The purpose of the FAC-015 standard is to ensure the Facility Ratings, steady-state voltage limits, and stability criteria used in the Planning Assessments are coordinated with the RC's SOL Methodology.

Requirement R4 in FAC-015-1 requires Transmission Planner to communicate its Stability Assessment results to the impacted Reliability Coordinator, Transmission Operator, Transmission Owner, and Generation Owner. We agree that Transmission Planner should communicate their Stability Assessment results to impacted entities, but we believe that this requirement belongs to TPL-001 standard and should not be a part of FAC-015 standard.

Likes	0
-------	---

Dislikes	0
----------	---

Response

The SDT appreciates the comments. The SDT considered and explored all avenues to place requirements in the correct families of Reliability Standards and to limit unnecessary requirements. Ultimately, through exhaustive discussions/debates with industry and regulatory

stakeholders, the decision was made to retain the notion of coordination of SOL-related performance criteria between planning and operating entities in the FAC family of Reliability Standards.

Teresa Cantwell - Lower Colorado River Authority - 5

Answer No

Document Name

Comment

FAC-015 creates a sort of double jeopardy for the Transmission Planner by placing the requirement of establishing a process on top of the requirements set out in FAC-001, FAC-007, FAC-011, FAC-014, MOD-032 and MOD-033 to establish and communicate the limits and should not be applicable to entities that already have the requirement to produce and use this data in analysis required by other NERC Reliability Requirements such as TPL-001.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. It is unclear how FAC-001 and MOD-033 is applicable.

FAC-007 is not subject to current or future enforcement.

FAC-011 applies to the RC.

FAC-014 is being coordinated with the changes to FAC-010, FAC-011, and FAC-015. The updated plan is to consolidate the requirements in the posted FAC-015 into a modified FAC-014.

Regarding the MOD-032 comment: The SDT proposal does not change the requirements for owners to provide Facility Ratings per FAC-008 and does not change the PC and TP responsibilities per MOD-032. The intent is for performance criteria between planning and operations to be better coordinated. For example, an owner may provide several time-limited Emergency Ratings. If the RC only operates to a 30-

minute Emergency rating, planning should not plan the system to a 15-minute Emergency Rating. There is no current provision for this instance in the MOD standards.

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

Answer Yes

Document Name

Comment

On behalf of our City Light SME: The standard is much improved from the previous draft. No comments on the content.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.

Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro

Answer Yes

Document Name

Comment

Correction: in both first and second bullet points of requirement R3, the “steady-state voltage limits” should be corrected as “stability limit”.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.

Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford	
Answer	Yes
Document Name	
Comment	
GTC is in agreement with the SDT's proposed FAC-015-1. The coordination of limits between planning and operations is an improvement over the current construct of having separate SOL methodologies for the planning and operations horizons. GTC is in agreement that some requirements in FAC-015-1 could alternatively be located within other standards such as TPL, MOD, etc. but recognizes the limits of the Project 2015-09 SAR.	
Likes	0
Dislikes	0
Response	
The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.	
Douglas Webb - Douglas Webb On Behalf of: Allen Klassen, Westar Energy, 6, 3, 1, 5; Bryan Taggart, Westar Energy, 6, 3, 1, 5; Derek Brown, Westar Energy, 6, 3, 1, 5; Grant Wilkerson, Westar Energy, 6, 3, 1, 5; Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; Jennifer Flandermeyer, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; John Carlson, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; - Douglas Webb	
Answer	Yes
Document Name	
Comment	
The companies support revised FAC-015-1.	
Likes	0
Dislikes	0

Response

The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.

Russell Noble - Cowlitz County PUD - 3

Answer Yes

Document Name

Comment

See related comment provided in Question 4.

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.

Terry Bilke - Midcontinent ISO, Inc. - 2

Answer Yes

Document Name

Comment

We believe it would be acceptable for the PC to use the RC's SOL methodology or develop their own methodology that does not conflict with the RC's approach.

Once this standard is approved in final form, FAC-008 should be checked for interoperability and conformity with FAC-015 such that all ratings are covered(i.e., thermal, voltage, stability).

Likes 0

Dislikes	0
Response	
The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.	
Brandon Gleason - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Requirement R1 references application to “[e]ach Planning Coordinator and each of its Transmission Planners.” However, Measure M1 only refers to the “Planning Coordinator.” The same issue exists with respect to Requirements R2 and R3. ERCOT suggests aligning Measures M1, M2, and M3, with Requirements R1, R2, and R3 so that “Transmission Planners” are included in the Measures.	
Likes	0
Dislikes	0
Response	
The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014. The measures will be updated.	
Michael Godbout - Hydro-Quebec TransEnergie - 1 - NPCC	
Answer	Yes
Document Name	
Comment	
Measures M1, M2 and M3 must be revised to include the Transmission Planner.	
Also we support NYISO’s comment in regards to R1 and the conditions for using less limiting Facility Ratings. We support the first clause (“The Facility has higher Facility Ratings as a result...”). Allowing for less restrictive Facility Ratings because of differences in temperature	

seems inappropriate. If a different temperature is used by a planner, they should obtain the Facility Rating for that temperature. As for the possibility of submitting technical rationales to other entities, the requirement does not require buy-in by the receiving entities. Since the objective of this requirement is to align planning and operations, we respectfully submit that the Facility Ratings should be consistent in planning and operating models. Where there is disagreement, the more conservative value should be retained. This follows the approach in other standards where, in disagreement, the more conservative option is retained (for example, IRO-014).

The same comment applies to R2 and R3 - that is, we consider that the receiving entity, in particular when it is the RC, should be able to enforce the use of the more conservative assumption. However, for those two requirements we note that a "planned upgrade, addition, or Corrective Action Plans" (like in R1) are not explicitly included as reasons to modify the limits. They should be included like in R1.

We reiterate that the most conservative rating, limit should be used. However, we agree that facility upgrades or additions do not need to be referred to the RC for its confirmation.

The VSL for R4, with its concern with the number of missing characteristics, does not make sense. If a PC or TP were to incorrectly communicate an instability - but only incorrect in one characteristic - this would be a lower VSL, but it could, if that error was important, make the communication useless and put the system at risk. The VSL should be severe, unless the error without consequence from an operational point of view. That is, if the RC was able to take correct actions as a consequence, then the error is without consequence. If the RC's actions were incorrect as a consequence of the error, then it should be Severe.

Likes	0
-------	---

Dislikes	0
----------	---

Response

The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.

See response to NYISO comment

Jack Stamper - Clark Public Utilities - 3

Answer	Yes
--------	-----

Document Name	
---------------	--

Comment	
---------	--

Likes 0	
Dislikes 0	
Response	
The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.	
Laura Nelson - IDACORP - Idaho Power Company - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response

The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.

Scott Downey - Peak Reliability - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.

Richard Jackson - U.S. Bureau of Reclamation - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.

Thomas Foltz - AEP - 5

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.	
Chris Wagner - Santee Cooper - 1, Group Name Santee Cooper	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.	
Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF, Group Name PPL NERC Registered Affiliates	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.	
Preston Walker - PJM Interconnection, L.L.C. - 2 - SERC,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.

Kathleen Goodman - Kathleen Goodman On Behalf of: Michael Puscas, ISO New England, Inc., 2; - ISO New England, Inc. - 2 - NPCC

Answer	Yes
---------------	-----

Document Name	
----------------------	--

Comment	
----------------	--

Likes 0	
---------	--

Dislikes 0	
------------	--

Response	
-----------------	--

The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.

Amy Casuscelli - Amy Casuscelli On Behalf of: Michael Ibold, Xcel Energy, Inc., 3, 1, 5; - Amy Casuscelli

Answer	Yes
---------------	-----

Document Name	
----------------------	--

Comment	
----------------	--

Likes 0	
---------	--

Dislikes 0	
------------	--

Response	
-----------------	--

The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.

Quintin Lee - Eversource Energy - 1

Answer	Yes
---------------	-----

Document Name	
----------------------	--

Comment

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company

Answer

Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

The SDT appreciates the comments. The SDT has updated its proposal to consolidate the requirements in FAC-015 into a modified FAC-014.

6. Discussions within the SDT indicated concerns with eliminating some of the components of the approved SOL definition. While the industry feedback was largely supportive of the draft SOL definition provided in the informal posting, the SDT modified the proposed definition to incorporate some of the concepts in the approved version. The SDT believes that the revised definition posted for ballot represents an improvement over the definition provided in the informal posting. Reference the SOL rationale document for more information. Do you agree with the proposed SOL definition?

Teresa Cantwell - Lower Colorado River Authority - 5

Answer No

Document Name

Comment

“All” should be “The”

Likes 0

Dislikes 0

Response

Thank you for your feedback. The use of the word “all” versus the word “the” was discussed at length in the development of the definition. The drafting team concluded that the use of the word “all” was a more accurate word selection because it eliminates any confusion of the inclusive nature of the term. It is important that the definition convey the notion that all Facility Ratings, System Voltage Limits, and stability limits are always SOLs at all times

William Sanders - Lower Colorado River Authority - 1

Answer No

Document Name

Comment

"All" should be "The"	
Likes	0
Dislikes	0
Response	
Thank you for your feedback. The use of the word "all" versus the word "the" was discussed at length in the development of the definition. The drafting team concluded that the use of the word "all" was a more accurate word selection because it eliminates any confusion of the inclusive nature of the term. It is important that the definition convey the notion that all Facility Ratings, System Voltage Limits, and stability limits are always SOLs at all times.	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
SRP generally agrees with the proposed definition. However, when read separately from the technical rationale, the phrase "specified System configuration" is ambiguous and does not add clarity to the definition. SRP recommends adjusting the proposed definition to more completely explain the relationship between limits and specified System configurations.	
Likes	0
Dislikes	0
Response	
Response: Thank you for your feedback. The drafting team discussed this issue at length and determined that it is important to retain the "specified System configuration" language in the revised definition. The rationale document specifically addresses the reasoning for this position: <i>The SDT proposes to retain the reference to "specified system configuration" due to the fact that stability limits in particular are typically dependent on system configuration. While Facility Ratings and System Voltage Limits are not typically dependent upon system configuration,</i>	

there may be times where they may be dependent on System configuration. For example, if a transmission line is connected by two circuit breakers at one end of the line, and one of those two circuit breakers is open, the value of the Facility Rating for line could be reduced due to current carrying capability of the remaining in-service circuit breaker.

David Jendras - Ameren - Ameren Services - 3

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

While the proposed definition is indeed a vast improvement over the existing, ambiguity is introduced when specifying "facility ratings" if the current definition of IROL (which relies on the definition of SOL) is kept. The singular of facility implies one facility but in practice, IROLs are often established a combination flows not specific to one facility but aggregations of facilities. These IROL MW flow limits may not trigger voltage or stability concerns. The definition should be modified to reflect this concept either by replacing "facility" with "facility(ies)" or by adding a dependent clause such as "facility ratings, either individually or taken in combinations, system voltage..."

Likes	0
-------	---

Dislikes	0
----------	---

Response

Thank you for your feedback. Per the proposed revised definition, a Facility Rating is an SOL. While IROLs may be monitored as a sum of flows on several Facilities, this does not change the fact that a Facility Rating is an SOL. Phase two of the project will address IROLs and may include a revision of the IROL definition. The drafting team will keep your comments under consideration for that future work.

Terry Bilke - Midcontinent ISO, Inc. - 2

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

While the definition is cleaner, the rationale document needs to be clear that exceeding a non-IROLSOL, particularly post contingency, is not a violation of any operating standard or criteria.

Likes 0

Dislikes 0

Response

Thank you for your feedback. This comment, however, does not address the definition, but rather addresses compliance with operating Reliability Standards.

Kelsi Rigby - APS - Arizona Public Service Co. - 5

Answer

No

Document Name

[Proposed definition of SOL.docx](#)

Comment

As written, it appears that an entity would need to provide multiple Facility Ratings, system voltage limits, and Stability Limits. AZPS recommends amending the proposed definition as shown in the attached WORD document to clarify that multiple limits are not required but may be provided if needed.

Likes 0

Dislikes 0

Response

Thank you for your feedback. While the drafting team agrees that the additional language (the second sentence in APS' proposed definition) is true, we do not believe that it substantially enhances the definition.

Joe O'Brien - NiSource - Northern Indiana Public Service Co. - 6

Answer

No

Document Name

Comment

NIPSCO believes that the start of the definition should read “SOL is the most limiting of”, as all limits should not be considered a System Operating Limit. We believe only the most limiting of the limits on a facility should be considered a System Operating Limit. If “all” ratings need to be monitored this would present a problem for many software platforms as there is no way to insert more than 3 or 4 ratings into a facility record.

Likes 0

Dislikes 0

Response

Thank you for your feedback. The drafting team discussed this issue at length and determined that the “most limiting of” language is inconsistent with the essence of the revision. Page 7 of the rationale document addresses this issue at length.

Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC

Answer

No

Document Name

Comment

“Monitoring and assessing” implies the process that is gone through to develop and use an SOL. This definition should focus on what an SOL is, not the process by which SOLs are found or how SOLs are used.

BPA suggested definition:

All Facility Ratings, System Voltage Limits, and stability limits, applicable to specified System configurations, to ensure reliable operation of the Bulk Electric System in both the pre- and post-Contingency operating states.

Likes 0

Dislikes 0

Response

Thank you for your feedback. While the drafting team generally agrees with your comments, the monitoring and assessing language was added at the specific request of FERC staff. The proposed definition is problematic because of the use of the “to ensure reliable operation of” language.

Robert Blackney - Edison International - Southern California Edison Company - 1,3,5,6 - WECC

Answer Yes

Document Name

Comment

SCE supports the SDT’s revised definition of SOL. The proposed definition improves clarity and eliminates ambiguity that was present in the previous definition. Furthermore, it eliminates several items the definitions that were subject to interpretation.

Likes 0

Dislikes 0

Response

Thank you for your feedback.

Allie Gavin - Allie Gavin On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Allie Gavin

Answer Yes

Document Name

Comment

ITC agrees with MEC and supports the SDT’s revised definition of SOL. The proposed definition improves clarity, and eliminates ambiguity that was present in previous definition. Furthermore, it eliminates several items from previous definitions that were subject to interpretation.

Likes 0

Dislikes 0

Response

Thank you for your feedback.

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no Dominion, Con Ed and NBPower

Answer	Yes
---------------	-----

Document Name	
----------------------	--

Comment

We agree with the proposed SOL definition. A minor comment is to change the singular term SOL to plural SOLs to align with the plural form for limits in the proposed definition.

Likes	0
-------	---

Dislikes	0
----------	---

Response

Response

Thank you for your feedback. The drafting team agrees with your suggestion.

Douglas Webb - Douglas Webb On Behalf of: Allen Klassen, Westar Energy, 6, 3, 1, 5; Bryan Taggart, Westar Energy, 6, 3, 1, 5; Derek Brown, Westar Energy, 6, 3, 1, 5; Grant Wilkerson, Westar Energy, 6, 3, 1, 5; Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; Jennifer Flandermeyer, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; John Carlson, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; - Douglas Webb

Answer	Yes
---------------	-----

Document Name	
----------------------	--

Comment

The companies support the revised definition.

Likes	0
Dislikes	0
Response	
Thank you for your feedback.	
Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	
Comment	
The proposed definition is an improvement. It removes the redundancy of pre- and post-Contingency operating states.	
Likes	0
Dislikes	0
Response	
Thank you for your feedback.	
Kevin Salsbury - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
The proposed definition improves clarity, and eliminates ambiguity that was present in previous definition. Furthermore, it eliminates several items from previous definitions that were subject to interpretation.	
Likes	0
Dislikes	0

Response

Thank you for your feedback.

Oliver Burke - Entergy - Entergy Services, Inc. - 1

Answer Yes

Document Name

Comment

Entergy supports the comments submitted by MRO NSRF.

Likes 0

Dislikes 0

Response

Thank you for your feedback.

Michael Cruz-Montes - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE

Answer Yes

Document Name

Comment

No response.

Likes 0

Dislikes 0

Response

Andy Fuhrman - Andy Fuhrman On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Andy Fuhrman

Answer	Yes
Document Name	
Comment	
See MRO NERC Standards Review Forum comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your feedback. Please reference the MRO response.	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
We agree with the proposed SOL definition. A minor comment is to change the singular term SOL to plural SOLs to align with the plural form for limits in the proposed definition.	
Likes 0	
Dislikes 0	
Response	
Thank you for your feedback. The drafting team agrees with your suggestion.	
Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	

Comment

The MRO NSRF agrees with the proposed SOL definition. However, as stated in our response to question 1, we need additional clarification on the SOL expectation of the SDT. Is it your intent that each Facility has a thermal-based SOL or can a subset (Flowgates) be used to manage power flow on the system? This needs to be clearly stated in a requirement so that everyone is planning and operating the BES from the same understanding. Additionally, it's not clear if Normal Ratings and normal System Voltage Limits are considered SOLs, if you have higher Emergency Ratings or emergency System Voltage Limits for the Facilities. It could be interpreted to say Normal Ratings and normal System Voltage Limits aren't SOLs if you have higher Emergency Ratings and emergency System Voltage Limits. This understanding translates to compliance expectations in the IRO and TOP Standards for exceedances and when you must implement your Operating Plan. If we're relying on the SOL whitepaper to clarify, then some entities may choose not to follow it saying it's not mandatory. Since the SDT may not be able to answer compliance questions, we request NERC staff to draft a CMEP Practice Guide to inform the industry of the compliance expectations for SOLs as applied in the FAC, IRO and TOP standards.

Likes 0

Dislikes 0

Response

Thank you for your feedback. Each Facility has Facility Ratings, which are comprised of both a Normal Rating and one or more Emergency Ratings. For a given Facility, the full set of Facility Ratings, both the Normal Rating and all Emergency Ratings are SOLs at all times. Flowgates can certainly be used as a mechanism to manage power flow on the system; however, by definition, flowgate limits are not SOLs unless the flowgate defines a stability limit. Normal System Voltage Limits and Emergency System Voltage Limits are SOLs. All of these are SOLs all the time. The drafting team will communicate your recommendation to draft a CMEP Practice Guide as suggested.

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

Answer Yes

Document Name

Comment

On behalf of our City Light SME: City Light agrees with the definition.

Likes 0	
Dislikes 0	
Response	
Thank you for your feedback.	
Michael Godbout - Hydro-Qu?bec TransEnergie - 1 - NPCC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Eric Shaw - Eric Shaw On Behalf of: Lee Maurer, Oncor Electric Delivery, 1; - Eric Shaw	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Randy MacDonald - NB Power Corporation - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Brandon Gleason - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Douglas Johnson - American Transmission Company, LLC - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Brandon McCormick - Brandon McCormick On Behalf of: Carol Chinn, Florida Municipal Power Agency, 6, 4, 3, 5; Chris Gowder, Florida Municipal Power Agency, 6, 4, 3, 5; David Owens, Gainesville Regional Utilities, 3, 1, 5; Don Cuevas, Beaches Energy Services, 1, 3; Ginny	

Beigel, City of Vero Beach, 3; Joe McKinney, Florida Municipal Power Agency, 6, 4, 3, 5; Ken Simmons, Gainesville Regional Utilities, 3, 1, 5; Neville Bowen, Ocala Utility Services, 3; Randy Hahn, Ocala Utility Services, 3; Richard Montgomery, Florida Municipal Power Agency, 6, 4, 3, 5; Steven Lancaster, Beaches Energy Services, 1, 3; Tom Reedy, Florida Municipal Power Pool, 6; - Brandon McCormick, Group Name FMPPA

Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0

Response

Quintin Lee - Eversource Energy - 1

Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0

Response

Laura McLeod - NB Power Corporation - 5

Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Amy Casuscelli - Amy Casuscelli On Behalf of: Michael Ibold, Xcel Energy, Inc., 3, 1, 5; - Amy Casuscelli	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
faranak sarbaz - Los Angeles Department of Water and Power - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Kathleen Goodman - Kathleen Goodman On Behalf of: Michael Puscas, ISO New England, Inc., 2; - ISO New England, Inc. - 2 - NPCC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Colby Bellville - Duke Energy - 1,3,5,6 - FRCC,SERC,RF, Group Name Duke Energy	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Glenn Barry - Los Angeles Department of Water and Power - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tommy Drea - Dairyland Power Cooperative - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Anton Vu - Los Angeles Department of Water and Power - 6

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Preston Walker - PJM Interconnection, L.L.C. - 2 - SERC,RF

Answer Yes

Document Name

Comment

Likes	0
Dislikes	0
Response	
Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF, Group Name PPL NERC Registered Affiliates	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Chris Wagner - Santee Cooper - 1, Group Name Santee Cooper	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sing Tay - OGE Energy - Oklahoma Gas and Electric Co. - 6, Group Name OKGE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECI	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Patti Metro - National Rural Electric Cooperative Association - 3,4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kayleigh Wilkerson - Lincoln Electric System - 5, Group Name Lincoln Electric System	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Don Schmit - Nebraska Public Power District - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Downey - Peak Reliability - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Laura Nelson - IDACORP - Idaho Power Company - 1	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Jack Stamper - Clark Public Utilities - 3	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	

7. With the retirement of FAC-010, and the elimination of Planning-based SOLs and IROLs, do you agree with the changes to CIP-014, FAC-003, FAC-013, PRC-002, PRC-023 and PRC-026?

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

Answer No

Document Name

Comment

On behalf of our City Light SME: There is confusion about why the terms “SOL” and “IROL” need to be removed from some of these standards. In FAC-003, for example, shouldn’t any element identified as part of a currently effective IROL be considered under the applicability section, not just things identified in the Planning Assessment?

Likes 0

Dislikes 0

Response

The term SOL and IROL as labels in the planning horizon are being retired, replaced by the concepts in the revised TPL 001 standard. As such any standard that used the term SOL or IROL as an identified facility from the Planning horizon needed a new method of identifying those important facilities. Standards that use the SOL or IROL from the Operating Horizon did not have the term removed.

Sandra Shaffer - Berkshire Hathaway - PacifiCorp - 6

Answer No

Document Name

Comment

FAC-003-5 should be revised to align with the comments to FAC-015-1 in #5 above. Any requirements associated with a Near-Term Planning Assessment should align with the specific requirements in the approved TPL-001 Standard either the Operations Horizon or to a specific requirement within the TPL-001 Standard – R3.5 and R4.2.

Comments specifically for CIP-014-3: Applicability 4.1.1.3 should simply be removed. The proposed wording change causes confusion with the actual CIP-014 assessment, the whole purpose of which is to identify those Transmission substations that if rendered inoperable or damaged as a result of a physical attack could result in instability, Cascading or uncontrolled separation. The new proposed 4.1.1.3 would either create a circular argument or could inadvertently be interpreted to expand the scopes of TPL-001 and MOD-001. Any revisions to the requirements of the assessments in TPL-001 and MOD-001 should be made in those Standards, not through CIP-014.

Likes 0

Dislikes 0

Response

The drafting team believes the language offered in FAC-003 regarding a facility that if lost or degraded are expected to result in instances of instability, Cascading or uncontrolled separation does align with the TPL standard including the requirements that you referenced. The language offered in CIP-014 by the drafting team used similar language to FAC-003 and aligns with the analysis already done as part of the TPL 001 standard. The drafting team does not believe that it would create a circular argument, since it places no direct burden on the Planning Coordinator beyond communication. The team is assuming by MOD-001 you actually meet FAC-013, since MOD-001 address the determination of Available Transfer Capability and is not referenced in the standard.

Thomas Foltz - AEP - 5

Answer

No

Document Name

Comment

While AEP has no objections to the proposed changes to CIP-014, FAC-013, PRC-002, PRC-023 and PRC-026, we do have concerns regarding 4.2.2, Transmission Facilities, within FAC-003. We believe additional text is needed here to ensure no lines are unintentionally excluded by

a) the timing of their being identified as part of an IROL and b) the timing of any facilities identified, which could lead to instability, Cascading, or uncontrolled separation within associated planning assessments. AEP recommends that this section be clarified in the following manner...

*“Each overhead transmission line operated below 200kV, identified by the Planning Coordinator or Transmission Planner, per its Planning Assessment of the Near-Term Transmission Planning Horizon or its Transfer Capability Assessment (Planning Coordinator only) as a Facility that if lost or degraded are expected to result in instances of instability, Cascading, or uncontrolled separation **or overhead transmission line operated below 200kV that have been established as part of an IROL by the Reliability Coordinator per IRO-014-3 R1.**”*

AEP has chosen to vote negative on the proposed revisions to FAC-003, driven by the concerns expressed in this response.

Likes 0

Dislikes 0

Response

The drafting team believes that FAC-003 in addressing vegetation management applies to a longer period of time. As such the drafting team does not believe the designation of an IROL by the RC should be included in 4.2.2 since such a designation may be temporary or transitory in nature. The designation would not result in immediate vegetation management, and so it could be months or years before the vegetation management caught up with the designation, providing no practical benefit. If the RC does have an IROL below 200 kV that is expected to remain in place long enough that they would like it captured under FAC-003, they can coordinate with the Planning Coordinator or Transmission Planner to make sure it is captured in their study. Keep in mind this is only for facilities below 200 kV, all facilities above 200 kV Are captured by the standard.

Don Schmit - Nebraska Public Power District - 5

Answer No

Document Name

Comment

FAC-003-5 should have an implementation period once a study identifies a new Facility below 200 kV (Applicability Section) that could lead to instability, Cascading or uncontrolled separation. An entity needs the time to get that new Facility into it’s vegetation plan and meet the

clearances. The way the **current FAC-003-4 and proposed Standard FAC-003-5** is written an entity is out of compliance once the new studied Facility is identified if it does not meet clearances and the entity would then need to self report. NPPD recommends an implementation period of up to 24 months to allow for the newly identified facility to be incorporated into it's vegetation plan and for clearances to be met.

For the other Standards NPPD supports the comments submitted by the MRO NSRF.

Likes	0
-------	---

Dislikes	0
----------	---

Response

The Implementation plan for FAC-003 standards allows for at least 12 months after the line is designated, changing that duration is not within the scope of this SDT.

Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer	No
--------	----

Document Name	
---------------	--

Comment

The MRO NSRF supports the effort of the SDT to eliminate planning-based SOLs and IROLs, but to ensure clarity of expectations the revisions to these standards need to directly map to the applicable TPL-001-4 contingency results that indicate unacceptable instances of instability, Cascading, or uncontrolled separation. As currently proposed, every instance of instability or tripping of multiple elements could be considered in scope for IROLs. Additionally, the SDT should consider that requirements to perform transfer capability studies were determined by the Standards Efficiency Review project to be for commercial purposes and proposed for retirement in the phase 1 SAR.

Even though we realize the changes to CIP-002-6 are not in scope for this question and the modifications to the standard were given to the CIP SDT, the 2015-09 SDT is the one who understands the concept of IROLs. Therefore, we would appreciate the SDT passing the following concerns to the CIP SDT. The changes to CIP-002-6 criterion 2.6 and 2.9 do not add clarity. Unfortunately, the proposed changes to criterion 2.9 would bring in most SPS/RAS in the country because these systems are typically designed to avoid instability or a cascading outage scenario. Similarly, the proposed changes to criterion 2.6 substantially expands the scope of analysis. The current CIP-002-5.1 criterion 2.6

language is very clear and narrow because it limits the evaluation to those Facilities that have been shown to impact a large area of the system (i.e. what it means to be an IROL). With the proposed changes, many more Facilities will need to be evaluated for instability, but the end result will still be very few Facilities on the list (and those that make it on the list probably have an SPS/RAS to mitigate the concern). This appears to be an unneeded expansion of the criterion whereas the current language is precise. The SDT should keep in mind that IROLs will still exist under the proposed FAC standard revisions for the operating horizon and, therefore, no change is needed to R2.6 or R2.9.

We are not opposed to removing the Planning Coordinator in PRC-002 as an applicable functional entity and having the Reliability Coordinator as the only applicable regional function entity. However, we propose that the Time Horizon of all the Requirements be changed from “Long-term Planning” to “Operations Planning”, to be consistent with the direct and indirect applicability of the Requirements to the Reliability Coordinator.

Likes	0
-------	---

Dislikes	0
----------	---

Response

The current drafts discuss facilities that if lost or degraded are expected to result in instances of instability, Cascading, or uncontrolled separation that adversely impact the reliability of the Bulk Electric System. So as drafted the TP and PC would be identifying those facilities from their study that they believe meets that criteria, which may or may not include every instance of instability or tripping of elements if they do not adversely impact the reliability of the Bulk Electric System. The drafting team is aware of the effort to remove the FAC-013 transfer capability studies but until such time as they are actually removed the team must address them.

Time Horizon: The drafting believes that these requirements are long term planning (1 year or greater) because when there is a violation there is a window of time to recover from the violation. The Time Horizon is the period of time to mitigate a violation, as such certainly some of the Reliability Coordinator functions are in the Operations Planning horizon, but data recording equipment issues are not a violation that has to be resolved within a day or even within the current season, nor can they be resolved that quickly depending on the lead time on the equipment. Because this equipment is for after the fact analysis, and not the real time prevention of an issue, the longer time horizon continues to be appropriate.

Kayleigh Wilkerson - Lincoln Electric System - 5, Group Name Lincoln Electric System

Answer	No
--------	----

Document Name	
Comment	
LES supports the comments provided by the MRO NSRF.	
Likes	0
Dislikes	0
Response	
Please see the response to MRO NSRF.	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	No
Document Name	
Comment	
<p>We agree with changes to reflect the elimination of Planning-based SOLs and IROLs for CIP-014, FAC-003, FAC-013, PRC-002, and PRC-023.</p> <p>However, we do not agree with the change to the PRC-026 standard. The Planning Coordinator requires the Reliability Coordinator to provide those SOLS that are based on angular stability in order to assess Criteria 1 and 2 of Requirement R1. We suggest revising Requirement R1 to require the Reliability Coordinator provide the Planning Coordinator with those SOLs that are based on angular stability.</p>	
Likes	0
Dislikes	0
Response	

Thank you for the support on CIP-014, FAC-003, FAC-013, PRC-002, and PRC-023. For PRC-026 the responsibility is placed on the Planning Coordinator in the existing standard to provide the information to the Generator Owner and Transmission Owner and the drafting team maintained that requirement just moving away from the SOL and IROL language to better match the proposed paradigm. If the current practice in your area is that the Reliability Coordinator provides this information to the Planning Coordinator to fulfill this function than nothing in the revised standard would preclude that action.

Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

BPA recommends that CIP-014, FAC-003, FAC-015, PRC-023 and any other standards that reference “instability, uncontrolled separation, or Cascading” with the intent of replacing the term IROL be modified to include the qualifying phrase “*that adversely impact the reliability of either the interconnection or other Reliability Coordinator Area(s).*” This change aligns with the current NERC definitions for IROL and IROL Tv.

NERC definitions:

Interconnection Reliability Operating Limit (IROL): A System Operating Limit that, if violated, could lead to instability, uncontrolled separation, or Cascading outages *that adversely impact the reliability of the Bulk Electric System.*

Interconnection Reliability Operating Limit Tv (IROL Tv): The maximum time that an Interconnection Reliability Operating Limit can be violated before the risk to the *interconnection or other Reliability Coordinator Area(s)* becomes greater than acceptable. Each Interconnection Reliability Operating Limit’s Tv shall be less than or equal to 30 minutes.

BPA believes that the two NERC definitions work in conjunction to define when IROLs should be declared. The IROL definition identifies the BES, while the IROL Tv definition identifies an IROL Tv is used to protect the interconnection as a whole or other RC areas.

Likes	0
-------	---

Dislikes	0
----------	---

Response

The team revised the language to include the phrase as listed in the definition of IROL, “instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System”.

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1

Answer No

Document Name

Comment

Replacement of IROLs with vague unbounded terminology of “instability, uncontrolled separation, and cascading” isn't appropriate and is inferior to the current IROL approach. If IROLs aren't maintained, at a minimum, instability should be quantified with terms such as wide-area or a MW threshold such as the loss of 1,000 MW. The benefit of IROLs is the understanding of an impact threshold clearly understood and outlined in current IROL methodologies.

Vague terminology in zero defect standards results in unnecessary violations, interpretations, and compliance guidance.

Likes 0

Dislikes 0

Response

The team revised the language to include the phrase as listed in the definition of IROL, “instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System”.

Sing Tay - OGE Energy - Oklahoma Gas and Electric Co. - 6, Group Name OKGE

Answer No

Document Name

Comment

OKGE supports the comments provided by MRO NSRF. In addition, The SER Phase 1 project has already proposed that all the requirements in FAC-013-2 be retired. So, we don't see why this standard needs to be revised any further. We suggest that the SDT coordinate with the NERC SER team to discuss further.

Likes 0

Dislikes 0

Response

Please see the response to MRO NSRF. The team discussed the FAC013-2 retirement with NERC SER and NERC Staff. Until the FAC 13's retirement is officially approved by FERC the drafting team must modify the standard as if it's going to continue.

Joe O'Brien - NiSource - Northern Indiana Public Service Co. - 6

Answer

No

Document Name

Comment

Until the core standards of this project are settled NIPSCO is not ready to vote on these "dependent" standards and will likely Abstain at this time.

Likes 0

Dislikes 0

Response

Thank you for your comment.

Andy Fuhrman - Andy Fuhrman On Behalf of: Theresa Allard, Minnkota Power Cooperative Inc., 1; - Andy Fuhrman

Answer

No

Document Name	
Comment	
See MRO NERC Standards Review Forum comments.	
Likes 0	
Dislikes 0	
Response	
Please see the MRO NERC Standards Review Forum response.	
Michael Cruz-Montes - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	No
Document Name	
Comment	
CenterPoint Energy supports the elimination of Planning-based SOLs and IROLs; however, CenterPoint Energy does not agree with the changes to the standards listed above. By not incorporating language such as “that adversely impact the reliability of the BES” or some equivalent limiting phrasing into the proposed language used to replace IROL in these standards, the SDT may have expanded the scope of the applicability or requirement. Not all instances of instability rise to the level of adversely impacting the reliability of the BES, and these should not be considered in scope for the standards above.	
Likes 0	
Dislikes 0	
Response	
The team agrees and revised the language to include the phrase as listed in the definition of IROL, “instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System”.	

Chris Wagner - Santee Cooper - 1, Group Name Santee Cooper

Answer

No

Document Name

Comment

The proposed responsibility shift in Requirement R5 from Responsible Entity (Planning Coordinator, where presently applicable) to Reliability Coordinator is outside of the scope of Project 2015-09 set forth by the SAR and does not align with the Long-term Planning Time Horizon of PRC-002, as the RC is responsible for real-time operating reliability of its area.

Additionally, Santee Cooper has concerns over shifting the responsibilities of Requirement R5 from the Responsibility Entity (Planning Coordinator) to the Reliability Coordinator at this stage in the existing PRC-002-2 implementation plan.

- The initial implementation deadline for Requirement R5 has past. Capital expenditure decisions have already been made based on the initial identification by the Responsible Entity of BES Elements for which DDR data is required per the prescriptive requirements of the standard.
- Changing the evaluator and spreading the minimum DDR coverage requirement over the Reliability Coordinator’s historical simultaneous peak System Demand vs. the Responsible Entity could potentially change the results of the evaluation, and could potentially require additional equipment from an entity that is unbudgeted at this point.

Furthermore, there is a gap in the Implementation Plan for Project 2015-09 with regard to PRC-002-3.

- In the elements listed that shall remain applicable to the Implementation of PRC-002-3 R2, R3, R4, R6, R7, R8, R9, R10, R11, the Implementation Plan for Project 2015-09 does not address compliance requirements for a re-evaluated list from Requirement R1 or R5. The original PRC-002-2 gives entities three (3) years to be 100 percent compliant with a re-evaluated list from R1 or R5, allowing entities time to budget, design and commission any additional equipment that may be needed to comply. This omission creates a gap in the Implementation Plan, as R1 and R5 include mandatory re-evaluation at least once every five (5) years.

Multiple references to PRC-002-2 within the text of the draft standard have not been redlined, and should be replaced with PRC-002-3.

Multiple references to PRC-023-4 within the text of the draft standard have not been redlined, and should be replaced with PRC-023-5.

Multiple references to PRC-026-1 within the text of the draft standard have not been redlined, and should be replaced with PRC-026-2.

Likes 0

Dislikes 0

Response

The SDT believes placing responsibility solely on the Reliability Coordinator adds clarity and consistency for the task of identifying the BES Elements for which Dynamic Disturbance Recording (DDR) is required. The RC and TOP are the entities that identifies and monitors SOLs/IROLs within real time operations. Furthermore the RC is responsible for leading any investigation into events that would use this data. The TP and PC may assist in these efforts or even effectively lead them, but the standards and processes assign the responsibility to the RC. We have addressed the time window for implementation in the PRC-002 implementation plan and updated the standard references in all the documents.

Oliver Burke - Entergy - Entergy Services, Inc. - 1

Answer

No

Document Name

Comment

With the elimination of Planning-based SOLs and IROLs, the Standards drafting team has attempted to come up with alternate means of identification of facilities to fill the void, such as under Applicability Criterion 4.1.1.3 in CIP-014-3. The concern is that the use of terms like “instances of instability,” “Cascading,” and “uncontrolled separation” in place of IROL definition, is very vaguely defined in existing NERC standards and is highly subjective to individual entity’s interpretation and application methodology. Further, there are no thresholds suggested that can be applied to derive these facilities from Near Term Transmission Planning Assessments. Such a list of facilities could vary considerably even between the Planning Coordinator’s Assessment and the Transmission Planner’s Assessment. Use of such vaguely defined criteria will subject entities to undue burden of evaluating lot more facilities under all of the above standards (CIP-014, FAC-003,

FAC-013, PRC-002, PRC-023 and PRC-026) with increased risk of additional cost to be incurred. Suggest the standard drafting team come up with more specific methodology in place of IROL or delete this Criterion in CIP-014-3 and other applicable standards.

Likes 0

Dislikes 0

Response

The team agrees and revised the language to include the phrase as listed in the definition of IROL, “instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System”.

Kelsi Rigby - APS - Arizona Public Service Co. - 5

Answer

No

Document Name

Comment

AZPS requests clarification on what contingencies are included in:

- “Facilities that if lost or degraded” in CIP-014 and FAC-003;
- “Planning Assessments that identify instances of instability, Cascading, or uncontrolled separation” in B2 of Attachment B in PRC-023; and
- “Elements associated with angular instability identified in Planning Assessments.”

AZPS suggests the following changes to FAC-013-3:

- Remove R3

Remove “Reserved for future use” in R1.2 and update numbering accordingly

Additionally, Planning Assessments, completed through TPL-001-4, include multiple categories of contingencies (P0-P7) and Extreme Events as detailed in Table 1 of TPL-001-4. Extreme Events referenced in TPL-001-4 should be excluded from those addressed through CIP-014, FAC-003, FAC-013, PRC-023 and PRC-026. To fail to do so could result in double-counting of contingencies. Further, to fail to do so could result in local impact contingencies being considered as a result of other contingency evaluations. For example, evaluation of Extreme Events under CIP-014 can bring in low impact substations despite the fact that the instability identified would only have a very small impact that is confined to a local area. Such identified local instability does not and should not result in required hardening under CIP-014. For this reason, only Planning Events from Table 1 of TPL-001-4 should be included. AZPS is further concerned that studies that have previously been completed would need to be restudied in accordance with the new standard in order to satisfy the 12 month timeline in the implementation plan even if the timeline prescribed in the existing requirement has a longer timeframe. For example, CIP-014-2 R1 requires studies every 30 calendar months. AZPS does not support doing an additional study for CIP-014-2 R1 before the 30 month deadline that we will have already created a scheduled for in order to be compliant with the new standard before the 12 month implementation date.

Likes 0

Dislikes 0

Response

Thank you for the comments. The contingencies that apply would be any contingencies studied under the TPL 001 that resulted in the described phenomena.

For FAC-013 the drafting team made the minimum amount of changes since there is also an effort underway to retire FAC-013.

To help clarify the types of system responses that could result in facility identification the team expanded the language to include “that adversely impact the reliability of the Bulk Electric System” so it better matches the current IROL. Given this caveat the team believes that all contingencies from the TPL assessment would be included unless they are excluded by the language in the particular standard. The “double counting” is a moot point since listing the same facility more than once would not result in any more burden than listing it a single time.

Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

The changes for PRC-002 seems unrelated to the proposed FAC changes.

The proposed changes for CIP-014, PRC-023, and FAC-003 the replacement language is too broad. The Planning Assessment looks at extreme events which have low probability of occurring and for which corrective actions are not required. It doesn't seem reasonable that extreme events which result in instability, Cascading, or uncontrolled separation are now pulled into scope for CIP-014, PRC-023, and FAC-003 when CAP are not required by the TPL-001.

The proposed change to FAC-013 R1.3 seems unrelated to the proposed FAC change.

Likes	0
-------	---

Dislikes	0
----------	---

Response

The SDT believes placing responsibility solely on the Reliability Coordinator adds clarity and consistency for the task of identifying the BES Elements for which Dynamic Disturbance Recording (DDR) is required. The RC and TOP are the entities that identifies and monitors SOLs/IROLs within real time operations. Furthermore the RC is responsible for leading any investigation into events that would use this data. The TP and PC may assist in these efforts or even effectively lead them, but the standards and processes assign the responsibility to the RC. We have addressed the time window for implementation in the PRC-002 implementation plan and updated the standard references in all the documents.

The team agrees that the language was too broad and revised the language to include the phrase as listed in the definition of IROL, "instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System".

The change to FAC-013 was to remove the SOL language and to clarify in 1.3 that the assumptions should be consistent with the Planning Coordinator's Planning Assessment which is a specific set, versus planning practices which is a broader term.

Kevin Salsbury - Berkshire Hathaway - NV Energy - 5

Answer No

Document Name

Comment

NV Energy believes there is inconsistency with the language used in the CIP-002-6 Draft of the impact of instability, Cascading, or uncontrolled separation. NV Energy would request that the SDT include "Wide Area Impacts" to the language revisions in CIP-014, FAC-003, and PRC-023:

CIP-014 Applicability 4.1.1.3 should read:

4.1.1.3 *Transmission Facilities at a single station or substation location that are identified by the Planning Coordinator or Transmission Planner, per its Planning Assessment of the Near-Term Transmission Planning Horizon or its Transfer Capability Assessment (Planning Coordinator only), as Facilities that if lost or degraded are expected to result instances of **Wide Area impacts** such as instability, Cascading, or uncontrolled separation.*

FAC-003-5 Applicability 4.2.2 and 4.3.1.2 should read:

4.2.2. *Each overhead transmission line, operated below 200kV, identified by the Planning Coordinator or Transmission Planner, per its Planning Assessment of the Near-Term Transmission Planning Horizon or its Transfer Capability Assessment (Planning Coordinator only), as Facilities that if lost or degraded are expected to result in instances of **Wide Area impacts** such as instability, Cascading, or uncontrolled separation.*

4.3.1.2. *Operated below 200kV and are identified by the Planning Coordinator or Transmission Planner, per its Planning Assessment of the Near-Term Transmission Planning Horizon or its Transfer Capability Assessment (Planning Coordinator only), as Facilities that if lost or degraded are expected to result in instances of **Wide Area impacts** such as instability, Cascading, or uncontrolled separation; or ...*

PRC-023-5 Attachment B (Criterion 2) should read:

B2. The circuit is selected by the Planning Coordinator based on Planning Assessments that identify instances of **Wide Area impacts** such as instability, Cascading, or uncontrolled separation.

Likes 0

Dislikes 0

Response

The team agrees in principle to your suggestion, and revised the language to include the phrase as listed in the definition of IROL, “instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System”.

Tommy Drea - Dairyland Power Cooperative - 5

Answer No

Document Name

Comment

DPC supports the comments of MRO NSRF.

Likes 0

Dislikes 0

Response

See response to MRO NSRF

Chris Scanlon - Exelon - 1, Group Name Exelon Utilities

Answer No

Document Name

Comment

Comments: An administrative revision to PRC-023-5 is recommended to carry forward the approved implementation timing language from the PRC-023-3 Implementation Plan and the Errata to the Implementation Plan for the Revised Definition of “Remedial Action Scheme” (which included the PRC-023-4 revision). This non-substantive change to bring the current standard under revision into line with the currently approved version (and implementation notes) is necessary to avoid possible future errata revisions. A suggested revision is to include a footnote for the relevant sections in Section 4.2 Circuits (Sections 4.2.1.2, 4.2.1.3, 4.2.1.5, and 4.2.1.6) as follows:

4.2.1.2 Transmission lines operated at 100 kV to 200 kV selected by the Planning Coordinator in accordance with Requirement R6. 1

4.2.1.3 Transmission lines operated below 100 kV that are part of the BES and selected by the Planning Coordinator in accordance with Requirement R6.1

4.2.1.5 Transformers with low voltage terminals connected at 100 kV to 200 kV selected by the Planning Coordinator in accordance with Requirement R6. 1

4.2.1.6 Transformers with low voltage terminals connected below 100 kV that are part of the BES and selected by the Planning Coordinator in accordance with Requirement R6. 1

Footnote 1 suggested language:

1. Circuits identified by the Planning Coordinator in accordance with Requirement R6 shall be compliant the later of the first day of the first calendar quarter 39 months following notification by the Planning Coordinator of a circuit’s inclusion on a list of circuits per application of Attachment B, or the first day of the first calendar year in which any criterion in Attachment B applies, unless the Planning Coordinator removes the circuit from the list before the applicable effective date.

Likes 0

Dislikes 0

Response

Thank you for your comments, please review our changes to PRC-023 and the revised implementation plan, we think that we have addressed your concerns.

Spencer Tacke - Modesto Irrigation District - 4

Answer	No
Document Name	
Comment	
<p>For CIP-014, FAC-003, PRC-023, and PRC-026, I think there needs to be a revision to every proposed redline change, that states "per its Planning Assessment of the Near-Term Transmission Planning Horizon or its Transfer Capability Assessment as Facilities that if lost or degraded are expected to result in instances of instability, Cascading, or uncontrolled separation." To those proposed change statements, I believe we need to add at the end of each one in all the referenced above Standards, the simple phrase ", or other Study." I believe this is needed because the TPL Assessments or Transfer Capability Assessments in themselves, don't necessarily require the type of extreme contingencies to be studied that would cause instability, Cascading, or uncontrolled separation. Hence to demonstrate the impact of these type of extreme contingencies (such as was done for the CIP-014 analysis), studies other than the Annual TPL Assessment or Transfer Capability Assessments might need to be completed.</p>	
Likes	0
Dislikes	0
Response	
<p>Thank you for your comment. The drafting team had discussed this extensively and while we agree that such conditions might be identified in other studies, the team did not want to include language in the standard that could create a shadow requirement for the Planning Coordinator or Transmission Planner to run additional studies beyond those required in TPL 001. The Planning Coordinator could provide those additional studies for the other party to use on a voluntary basis or the Planning Coordinator could insure that the next years TPL-001 includes the conditions that would trigger the event, and thereby be able to communicate it in a binding fashion.</p>	
Colby Bellville - Duke Energy - 1,3,5,6 - FRCC,SERC,RF, Group Name Duke Energy	
Answer	No
Document Name	
Comment	

Duke Energy has concerns with the language proposed as a replacement to the IROL language in these standards. The language, *“per its Planning Assessment of the Near-Term Transmission Planning Horizon or its Transfer Capability Assessment (Planning Coordinator only) as Facilities that if lost or degraded are expected to result in instances of instability, Cascading, or uncontrolled separation,”* is too broad as written, and appears to bring TPL-001-4 Extreme Events into scope and other single & multiple contingency events well beyond the scope of the original single contingencies specified in R2 of FAC-010/011 and specified in R5.1.1 of the proposed FAC-011-4 to identify SOL’s and IROL’s. We believe more limiting language is appropriate.

CIP-014- Duke Energy feels that the draft language is too broad (see above).

FAC-003- As stated above, we have concerns with the appearance of an expansion of scope. This would be in conflict with the original intent of the standard which did not include such events. We believe more limiting language is appropriate. Also, there appears to be inconsistent use of Planning Coordinator or Transmission Planner (as used in the Applicability section), and Categories 1A-4B which references the Planning Coordinator only. Was it the drafting team’s intent that only the Planning Coordinator apply to those Categories?

PRC-002- Duke Energy does not support the change from Responsible Entity to Reliability Coordinator in R5. This would be a significant departure from current industry practices since the RC does not currently have assess operation in the Long Term Planning Horizon. This would prompt the need for Reliability Coordinators to revise current processes, and include steps to reach out to entities in its RC Area for this information. We fail to see the reliability benefit of transferring historically planning related activities to the Reliability Coordinator.

PRC-023- Duke Energy feels that the draft language is too broad (see above). We believe more limiting language is appropriate.

PRC-026- Duke Energy feels that the draft language is too broad (see above). We believe more limiting language is appropriate. Also, there appears to be a grammatical error in R1. Consider removing the “a” before “limiting the output of a generator”.

Likes	0
Dislikes	0

Response

IROL Replacement language: The team agrees and revised the language to include the phrase as listed in the definition of IROL, “instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System”.

CIP-014: See revised replacement language above, in addition CIP-014

FAC-003: The team felt it was best to have a single entity responsible in those criteria.

PRC-002: The SDT believes placing responsibility solely on the Reliability Coordinator adds clarity and consistency for the task of identifying the BES Elements for which Dynamic Disturbance Recording (DDR) is required. The RC and TOP are the entities that identifies and monitors SOLs/IROLs within real time operations. Furthermore the RC is responsible for leading any investigation into events that would use this data. The TP and PC may assist in these efforts or even effectively lead them, but the standards and processes assign the responsibility to the RC. We have addressed the time window for implementation in the PRC-002 implementation plan and updated the standard references in all the documents.

PRC-023: Please see if our revised language addresses your concern.

PRC-026: Please see if our revised language addresses your concern.

Douglas Webb - Douglas Webb On Behalf of: Allen Klassen, Westar Energy, 6, 3, 1, 5; Bryan Taggart, Westar Energy, 6, 3, 1, 5; Derek Brown, Westar Energy, 6, 3, 1, 5; Grant Wilkerson, Westar Energy, 6, 3, 1, 5; Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; Jennifer Flandermeyer, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; John Carlson, Great Plains Energy - Kansas City Power and Light Co., 5, 1, 3, 6; - Douglas Webb

Answer

No

Document Name

Comment

FAC-013-3

The companies recommend keeping FAC-013-3 R1.3 without revision and preserve the words “planning practices.”

The proposed R1.3 revisions, replacing “planning practices” with the NERC Glossary term, “Planning Assessments,” effectively assigns TPL assessment criteria and requirements to FAC-013. Such an outcome is inconsistent with the FAC-013 purpose to “...reliably transfer energy in the Near-Term Transmission Planning Horizon.”

Also, by effectively assigning TPL assessment criteria and requirements to FAC-013, assessments are duplicated and establish similar compliance obligations over multiple Standards.

Furthermore, by having similar compliance obligations over multiple Standards creates a compliance conundrum when either Standards yield a similar issue of noncompliance.

CIP-014 FAC-003 PRC-002 PRC-023 and PRC-026

The companies support the proposed revisions.

Likes	0
Dislikes	0

Response

Thank you for your comments. The SDT believes that leaving the language “planning practice” in place is too broad and unclear as to what planning practice, when, should be used in the FAC-013 study. Keep in mind 1.3 only requires a statement that the assumptions and criteria used are consistent with the Planning Assessment, but they don’t require them to be identical. 1.4 then provides the opportunity for the Planning Coordinator to explain what they are doing.

Ruth Miller - Exelon - 5

Answer	No
--------	----

Document Name	
---------------	--

Comment

Exelon GO agrees with commenets filed by Exelon TO

Likes	0
-------	---

Dislikes	0
Response	
Please see the response to the Exelon TO comments.	
John Bee - Exelon - 3	
Answer	No
Document Name	
Comment	
Exelon LSE supports Exelon TO comments.	
Likes	0
Dislikes	0
Response	
Please see the response to the Exelon TO comments.	
Becky Webb - Exelon - 6	
Answer	No
Document Name	
Comment	
Exelon MKT supports Exelon TO comments.	
Likes	0
Dislikes	0
Response	
Please see the response to the Exelon TO comments.	

John Pearson - John Pearson On Behalf of: Michael Puscas, ISO New England, Inc., 2; - John Pearson

Answer

No

Document Name

Comment

The proposed redline changes in CIP-014 and FAC-003 limit the application of facility identification that may result in instances of instability, Cascading or uncontrolled separation to only Planning Coordinator’s Planning Assessments of the near-term Planning Horizon and transfer assessments. This proposed change might be read to reduce the potential sources of information / analysis which entities use to today to make such identifications. The FAC-013 and PRC-002 changes are acceptable. With regard to PRC-023, the changes made to Criterion B2 have made it very unclear. The language “is selected by” infers that there is some sort of optional or judgement, but there is no indication of what that should be based on. Additionally, referring to Planning Assessment is too vague. Planning Assessments include consideration of extreme events, but these seem inappropriate for consideration in PRC-023. If the decision is made to keep B2 similar to what has been drafted, please change “Planning Assessments” to “assessments”, as this would allow for consideration of any available inputs. Proposed language is shown below. Similarly, for PRC-026, R1 criterion 2 is too restrictive by using the term “Planning Assessments”. This should be changed to “technical assessment” as shown below. Also in PRC-026, page numbers should be added to the Guidelines and Technical Basis section.

PRC-023 Criterion B2 further modification in bold below:

The circuit is selected **identified** by the Planning Coordinator based on assessments of **P0 – P7 Planning Events** that identify instances of instability, Cascading, or uncontrolled separation.

Additional revision for PRC-026, R1 criterion 2 in bold below:

Elements associated with angular instability identified in **technical assessments including but not limited to Planning Assessments**.

Likes 0

Dislikes 0

Response

For CIP-014, FAC-003, PRC-023 and PRC-026 the drafting team believes that specifying the Planning Coordinator TPL 001 Planning Assessment is the correct study to point at. The team discussed allowing other studies and assessments as well, but ultimately believed that leaving this to broad could have unintended consequences, such as implying that the Planning Coordinator should have these other studies and make them available. If the Planning Coordinator finds issues that need to be addressed through other studies, those can always be incorporated in to the next years TPL 001 Planning assessment Requiring them to be in the Planning Assessment also means that the items identified by the Planning Coordinator may also be triggering a corrective action plan.

Thank you for your support on FAC-013 and PRC-002

For PRC-023 the drafting team further limited the events to the near term horizon and planning events.

Terry Bilke - Midcontinent ISO, Inc. - 2

Answer	No
Document Name	
Comment	
<p>MISO agrees with retiring FAC-010.</p> <p>With regard to PRC-026_R1, the first sub-bullet appears to either have a grammatical error or it should be revised for clarity. “Generator(s) where an angular stability constraint exists that is addressed by a limiting the output of a generator or RAS...”. Suggestion is to remove the words “...addressed by a...”.</p>	
Likes	0
Dislikes	0
Response	
<p>Thank you for your support. The drafting team adjusted the wording in PRC-026_R1 to remove a stray “A” and that should help with the grammatical error.</p>	
Kathleen Goodman - Kathleen Goodman On Behalf of: Michael Puscas, ISO New England, Inc., 2; - ISO New England, Inc. - 2 - NPCC	
Answer	No
Document Name	
Comment	
<p>The Standard Drafting Team needs to address whether the proposed redlines in Projects 2016-02 and 2015-09 are meant to clarify existing practices for identifying BES assets, or are intended to modify current approaches, specifically with regard to identifying generation resources under CIP-002.</p>	

The proposed redline changes in CIP-002 and CIP-014 limit the application of facility identification that may result in instances of instability, Cascading or uncontrolled separation to only Planning Coordinator’s Planning Assessments of the near-term Planning Horizon and transfer assessments. This proposed change might be read to reduce the potential sources of information / analysis which entities use to today to make such identifications.

Lastly, the Project 2016-02 Standard Drafting Team must coordinate with the Project 2015-09 Standard Drafting Team since these redlines appear not only for modifications to CIP-002 but also to CIP-014, and the requisite and primary technical expertise to understand IROLs is in the Project 2015-09 SDT.

Likes	0
Dislikes	0

Response

For CIP-002 please forward questions to the CIP team.

The team discussed extensively using language that allowed the Planning Coordinator and Transmission Planner to bring in other studies or assessments in addition to their Planning Assessment. However ultimately the team decided that the required Assessment that places requirement on the Planning Coordinator and Transmission Planner was the only study that should be referenced. First of all because it is a study where the Planning Coordinator and Transmission Planner are required to do something with the results and second to avoid creating questions regarding “what other studies/assessments”. There is nothing that would preclude a Planning Coordinator or Transmission Planner from identifying something in studies or assessments through the year, and then including that study/assessment in their annual Planning Assessment – thereby passing the information on to the end user in the context of the standard.

faranak sarbaz - Los Angeles Department of Water and Power - 1

Answer	No
Document Name	

Comment

The question is not clear. We do not have the same position in all the standards listed here.

Likes 0

Dislikes 0

Response

Thank you for your comment.

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no Dominion, Con Ed and NBPower

Answer No

Document Name

Comment

It is our understanding that ‘Planning Assessment’ in the proposed change from referring to IROLs to “..., per its Planning Assessment of the Near-Term Transmission Planning Horizon or its Transfer Capability Assessment (Planning Coordinator only) as Facilities that if lost or degraded are expected to result in instances of instability, Cascading, or uncontrolled separation” refers to studies performed for the Near-Term Transmission Planning Horizon per NERC Reliability Standard TPL-001-4. The term Planning Assessment is in the NERC ‘Glossary of Terms Used in NERC Reliability Standards’ defined as “Documented evaluation of future Transmission System performance and Corrective Action Plans to remedy identified deficiencies.” To reduce the risk of continued inconsistency, we propose to add “technical analyses such as its” to the text replacing the previous reference to IROLs as well as a minor editorial change to the reference to Transfer Capability assessment in all applicable NERC Reliability Standards listed in Project 2015-09 as well as, if approved, to NERC Reliability Standard CIP-006-2. Hence, we proposed the text replacing the reference to IROLs to read “..., per technical analyses such as its Planning Assessment of the Near-Term Transmission Planning Horizon or the Planning Coordinator’s Transfer Capability assessment, as Facilities, that, if lost or degraded are expected to result in instances of instability, Cascading, or uncontrolled separation.”

We agree with changes to reflect the elimination of Planning-based SOLs and IROLs for CIP-014, FAC-003, FAC-013, PRC-002, and PRC-023.

However, we do not agree with the change to the PRC-026 standard. The Planning Coordinator requires the Reliability Coordinator to provide those SOLS that are based on angular stability in order to assess Criteria 1 and 2 of Requirement R1. We suggest revising Requirement R1 to require the Reliability Coordinator provide the Planning Coordinator with those SOLs that are based on angular stability.

Likes 0

Dislikes 0

Response

The team discussed extensively using language that allowed the Planning Coordinator and Transmission Planner to bring in other studies or assessments in addition to their Planning Assessment. However ultimately the team decided that the required Assessment that places requirement on the Planning Coordinator and Transmission Planner was the only study that should be referenced. First of all because it is a study where the Planning Coordinator and Transmission Planner are required to do something with the results and second to avoid creating questions regarding “what other studies/assessments”. There is nothing that would preclude a Planning Coordinator or Transmission Planner from identifying something in studies or assessments through the year, and then including that study/assessment in their annual Planning Assessment – thereby passing the information on to the end user in the context of the standard.

Thank you for your support on CIP-014, FAC-003, FAC-013, PRC-002, and PRC-023.

For PRC-026 the current standard does not require the Planning Coordinator to get this information from the Reliability Coordinator, if that is your current practice nothing in the changes would preclude the Reliability Coordinator from continuing to give the information to the Planning Coordinator.

Quintin Lee - Eversource Energy - 1

Answer

No

Document Name

Comment

Replacing the term IROL with the IROL definition may lead to inconsistent determinations by different Entities.

Likes 0

Dislikes 0

Response

The Drafting team used the full definition of IROL instead of the partial definition used earlier, and leaving the term IROL in place would be ineffective since the drafting team is retiring FAC-010 and thereby the usage of the term IROL within planning space.

Brandon McCormick - Brandon McCormick On Behalf of: Carol Chinn, Florida Municipal Power Agency, 6, 4, 3, 5; Chris Gowder, Florida Municipal Power Agency, 6, 4, 3, 5; David Owens, Gainesville Regional Utilities, 3, 1, 5; Don Cuevas, Beaches Energy Services, 1, 3; Ginny Beigel, City of Vero Beach, 3; Joe McKinney, Florida Municipal Power Agency, 6, 4, 3, 5; Ken Simmons, Gainesville Regional Utilities, 3, 1, 5; Neville Bowen, Ocala Utility Services, 3; Randy Hahn, Ocala Utility Services, 3; Richard Montgomery, Florida Municipal Power Agency, 6, 4, 3, 5; Steven Lancaster, Beaches Energy Services, 1, 3; Tom Reedy, Florida Municipal Power Pool, 6; - Brandon McCormick, Group Name FMPPA

Answer No

Document Name

Comment

FMPPA is concerned that the language being proposed to replace defined terms is too broad and creates too many questions regarding how to comply with the standards.

Likes 0

Dislikes 0

Response

The team agrees and revised the language to include the phrase as listed in the definition of IROL, “instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System”.

Brandon Gleason - Electric Reliability Council of Texas, Inc. - 2

Answer	No
Document Name	
Comment	
<p>CIP-014:</p> <p>The SDT proposed the following language for CIP-014-3 Applicability 4.1.1.3:</p> <p>Transmission Facilities at a single station or substation location that are identified by the Planning Coordinator or Transmission Planner, per its Planning Assessment of the Near-Term Transmission Planning Horizon or its Transfer Capability Assessment (Planning Coordinator only) as Facilities that if lost or degraded are expected to result in instances of instability, Cascading, or uncontrolled separation.</p> <p>ERCOT proposes that “instability” be changed to “system instability.”</p> <p>ERCOT believes the use of the term “instability” is too broad and could be interpreted to include localized instability events that do not have a widespread impact. This suggestion is consistent with the concern noted in the NERC Methods for Establishing IROLs Task Force (MEITF) report at p. vii:</p> <p>Specifically, the PRR acknowledged that the use of the word “instability” in the IROL definition is particularly problematic as this term can be interpreted to include any and every instance of instability that spans the entire spectrum of consequences and severity of impact—ranging from one extreme where instability results in the loss of a single small unit to the other extreme where instability results in widespread</p>	

outage of a major portion of an RC area or beyond. The PRR contended that localized, contained instances of instability that affect a small amount of load have little to no impact on the reliability of the BES and do not warrant IROL establishment.

The MEITF report defines the term “system instability” as:

The inability of the Bulk Power System,* for a given initial operating condition, to regain a state of operating equilibrium after being subjected to a Disturbance.

*Refers to the remaining portion of the interconnected Bulk Power System, with the exception of the Elements disconnected as a result of the Disturbance.

ERCOT agrees that not all instances of instability warrant IROL establishment. For this reason, and to remain consistent with the MEITF report, ERCOT recommends that the proposed language for CIP-014-3 Applicability 4.1.1.3 be modified to include “system instability” rather than “instability.”

ERCOT notes there are other instances in various Requirements where the use of “system instability” may be more appropriate than “instability.”

FAC-003: None

FAC-013: None

FAC-015:

It appears there may be a copy/paste typo. ERCOT suggests using “steady-state voltage,” instead of “stability.”

PRC-002: None

PRC-023: None

PRC-026:

ERCOT is concerned that the phrase, “Elements associated with angular instability identified in Planning Assessments” in R2, Criteria No. 2 creates ambiguity and an unintended expansion in the scope of PRC-026.

ERCOT suggests deleting the current draft Criteria 1 & 2 and replacing them with the following in order to more closely align with the intent of both PRC-026 and Project 2015-09:

1. Generator(s) where an angular stability constraint exists that is addressed by limiting the output of the generator or by a Remedial Action Scheme (RAS), and those Elements terminating at the Transmission station associated with the generator(s).
2. Elements that are monitored in order to enforce an existing angular stability constraint.

Likes 0

Dislikes 0

Response

CIP-014 The team agrees and revised the language to include the phrase as listed in the definition of IROL, “instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System”.

FAC-003, FAC-013, PRC-002, PRC-023: Thank you for your support.

PRC-026: The drafting team made some revisions to the language that hopefully has addressed your concerns?

Neil Swearingen - Salt River Project - 1,3,5,6 - WECC

Answer No

Document Name

Comment

SRP identifies the following adjustments that must be made to avoid confusion to the Reliability Standards:

FAC-003-5: (references made to redline version)

-Page 10 – Delete the reference to R2

-Page 13 R1 VSL should reference FAC-003-5 Table 2 not FAC-003-4

-Page 24-25 – Delete all references to R2

PRC-026 (references in the Redline)

-Entire document: change the references to PRC-026-1 Attachment A & B to PRC-026-1 Attachment A&B

PRC-023-5 (references redline document)

-Entire Document: Adjust the references to PRC-023-4 to PRC-023-5

Likes 0

Dislikes 0

Response

For PRC-026 thank you for your feedback, the team has made some changes based on your comments.

For PRC-023-5 the changes suggested have been made.

Allie Gavin - Allie Gavin On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Allie Gavin

Answer No

Document Name

Comment

CIP-014-3: Per the CIP-014 Guidance, ITC believes the CIP-014 Applicability 4.1.1.1 to 4.1.1.4 should mirror the CIP-002-5.1a Attachment 1 criterion 2.4-2.7. The proposed changes for CIP-014 Applicability 4.1.1.3 do match the proposed (Project 2016-02 Modifications to CIP Standards) changes for CIP-002-5.1a Attachment 1 criterion 2.6. However, ITC believes any discussion pertaining to CIP-014 Applicability is

better suited for “Project 2016-02 Modifications to CIP Standards. In addition, ITC remains concern that the originating changes from FAC Reliability standards diminish the need for a process to ensure the RC/PC/TO entities are including for evaluation facilities and assets to support the intent of the NERC CIP standards.”

PRC-002-3: Changes made do not affect ITC’s current PRC-002 process.

Likes 0

Dislikes 0

Response

Thank you for your comment on CIP-014, the SDT has been working with the Project 2016-02 on the changes.

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company

Answer

No

Document Name

Comment

Regarding 4.1.1.3 in the Functional Entities section of CIP-014-3, Southern believes that the verbiage **“would adversely affect reliability of the Bulk Electric System”** should be added to the proposed wording to ensure that the changes are more in line with the current definition of an IROL (see below):

4.1.1.3 Transmission Facilities at a single station or substation location that are identified by the Planning Coordinator or Transmission Planner, per its Planning Assessment of the Near-Term Transmission Planning Horizon or its Transfer Capability Assessment (Planning Coordinator only) as Facilities that if lost or degraded are expected to result in instances of instability, Cascading, or uncontrolled separation **would adversely affect reliability of the Bulk Electric System.**

Regarding 4.2.2 in the Functional Entities section of FAC-003-5, Southern believes that the verbiage “**would adversely affect reliability of the Bulk Electric System**” should be added to the proposed wording to ensure that the changes are more in line with the current definition of an IROL.

4.2.2. Each overhead transmission line operated below 200kV, identified by the Planning Coordinator or Transmission Planner, per its Planning Assessment of the Near-Term Transmission Planning Horizon or its Transfer Capability Assessment (Planning Coordinator only) as a Facility that if lost or degraded are expected to result in instances of instability, Cascading, or uncontrolled separation **would adversely affect reliability of the Bulk Electric System.**

Regarding B2 in the Criteria section of PRC-023-5, Southern believes that the verbiage “**would adversely affect reliability of the Bulk Electric System**” should be added to the proposed wording to ensure that the changes are more in line with the current definition of an IROL (see below):

B2. The circuit is selected by the Planning Coordinator based on Planning Assessments that identify instances of instability, Cascading, or uncontrolled separation that **would adversely affect reliability of the Bulk Electric System.**

Regarding PRC-002-3, Southern does not believe that the Responsible Entity (under Functional Entities 4.1) should be changed.

Southern Company’s main concern with the proposed changes is not the substitution of the IROL term with the three outcomes – instability, Cascading, or uncontrolled separation – our main concern is the prescriptive nature of naming Planning Coordinator studies which is beyond existing IROL methodologies, and the use of the unbounded term “instability”. For example, compliance with present TPL-001-4 standard for Planning (P) events (and proposed TPL-001-5) requires that any future instability, Cascading, or uncontrolled separation circumstances to be identified and mitigated as per the Corrective Action Plan. While instability, Cascading, or uncontrolled separation do not have to be mitigated for Extreme Events in TPL-001-4/(future 5), as the name implies, Extreme Events are rare events.

Southern Company, like many other companies, has an IROL methodology that is largely based in RC and PC stability input. This methodology identifies SOLs and any subset of the identified SOLs that should be elevated to IROLs. As such, we suggest that references to

specific compliance-based studies such as TPL-001 and FAC-013 be removed and allow the use of in-place proven study methodologies to determine and communicate scenarios that are realistic potential instances of instability, Cascading, or uncontrolled separation. (reference CIP-014, FAC-003, PRC-023 and PRC-026).

Likes 0

Dislikes 0

Response

CIP-014 & PRC-023: The team agrees and revised the language to include the phrase as listed in the definition of IROL, “instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System”.

PRC-002: The SDT believes placing responsibility solely on the Reliability Coordinator adds clarity and consistency for the task of identifying the BES Elements for which Dynamic Disturbance Recording (DDR) is required. The RC and TOP are the entities that identifies and monitors SOLs/IROLs within real time operations. Furthermore the RC is responsible for leading any investigation into events that would use this data. The TP and PC may assist in these efforts or even effectively lead them, but the standards and processes assign the responsibility to the RC. We have addressed the time window for implementation in the PRC-002 implementation plan and updated the standard references in all the documents.

The team discussed extensively using language that allowed the Planning Coordinator and Transmission Planner to bring in other studies or assessments in addition to their Planning Assessment. However ultimately the team decided that the TPL Assessment was the best reference point. Using variations on the expression “studies, assessments” without the term Planning Assessment could allow a Planning Coordinator or Transmission Planer to not do any studies and thereby not pass any data. Referencing other studies in addition to the Planning Assessment would than raise questions on what other studies were the Planning Coordinator and Transmission Planner expected to perform. There is nothing that would preclude a Planning Coordinator or Transmission Planner from identifying something in studies or assessments through the year, and then including that study/assessment in their annual Planning Assessment – thereby passing the information on to the end user in the context of the standard.

Randy MacDonald - NB Power Corporation - 1

Answer	No
Document Name	
Comment	
<p>Looking at FAC-003-5 as an example:</p> <p>The application of the text "Facility that if lost or degraded are expected to result in instances of instability Cascading, or uncontrolled separation", while used to identify those lines (under 200 kV) that are applicable to FAC-003-5, appears too discretionary. Is the intent to identify those elements that if lost/degraded and in combination with a contingency is expected to result in instances of?</p>	
Likes 0	
Dislikes 0	
Response	
<p>The team agrees and revised the language to include the phrase as listed in the definition of IROL, "instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System". As for which facility, the facility that is lost or degraded would be the contingency facility.</p>	
William Sanders - Lower Colorado River Authority - 1	
Answer	No
Document Name	
Comment	
<p>See comments above.</p>	
Likes 0	
Dislikes 0	

Response

Eric Shaw - Eric Shaw On Behalf of: Lee Maurer, Oncor Electric Delivery, 1; - Eric Shaw

Answer	No
---------------	----

Document Name	
----------------------	--

Comment

CIP-014:

- The applicability section 4.1.1.3 in CIP-014-3 specifies that if instances of instability, Cascading or uncontrolled separation occurred due to the loss of a facility in the Near-term planning assessment, it would be applicable to the CIP-014 analysis.
- The term “instances of instability” is not clear and needs to be defined clearly to eliminate confusion of what qualifies a facility to be assessed in CIP-014.

FAC-003:

- Violation Severity Levels (Table 1) (pgs. 13-16)
- Since R2 was removed from the table on pg. 14, there is no documentation of the severity levels for lines above 200 kV that are not “identified by the Planning Coordinator, per its Planning Assessment of the Near-Term Transmission Planning Horizon or its Transfer Capability Assessment (Planning Coordinator only) as Facilities that if lost or degraded are expected to result in instances of instability, Cascading, or uncontrolled separation”
- FAC-003 1.4 Additional Compliance Information (pg. 10)
 - There appears to be a typo regarding the footnote that is referenced:

- “Periodic Data Submittal: The applicable Transmission Owner and applicable Generator Owner will submit a quarterly report to its Regional Entity, or the Regional Entity’s designee, identifying all Sustained Outages of applicable lines operated within their Rating and all Rated Electrical Operating Conditions as determined by the applicable Transmission Owner or applicable Generator Owner to have been caused by vegetation, except as excluded in footnote 2, and including as a minimum the following:”
- Should this be changed to “footnote 4”? This typo has been in FAC-003-3 & FAC-003-4 versions.
- This change will ensure we are not required to submit tree related outages that are “beyond our control”.

Likes 0

Dislikes 0

Response

CIP-014: The team agrees and revised the language to include the phrase as listed in the definition of IROL, “instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System”.

FAC-003: The comments regarding R2 were applied to the standard. Footnote 4 was also corrected.

Teresa Cantwell - Lower Colorado River Authority - 5

Answer No

Document Name

Comment

See comments above.

Likes 0

Dislikes 0

Response

Please see response above.

Michael Godbout - Hydro-Quebec TransEnergie - 1 - NPCC

Answer No

Document Name

Comment

The modifications to the standards are not consistent.

We note three key differences:

1. In PRC-002-2, the PC function is removed leaving the RC function, whereas in the other standards (e.g. CIP-014-3), the RC function is removed, leaving the PC function. We disagree with this change.

When PRC-002-2 was being developed, the Drafting Team was aware that different Functional Entities across the continent would be the appropriate parties to be responsible for the Standard's requirements. This was presented to industry in the Request for Comments posted November 1, 2013 through December 16, 2013. The Responsible Entity was defined in Section 4 of the Introduction in PRC-002-2 accordingly. Nothing in section R5 supposes that the SOL are planning SOL; the PC can obtain the relevant SOL for their determination per requirement R5 of FAC-014-3.

2. In the CIP-013 and FAC-003, the Near-Term Transmission Planning Horizon of the Planning Assessment is specified, whereas it is not specified in for the two PRC standards. The two PRC standards should use the same approach. In particular, issues in the long-term horizon of the Planning Assessment should not be relevant to the application of the PRC-023 and PRC-026 standards.

3. In PRC-023, the text "that identify instances of instability, Cascading, or uncontrolled separation" is different than the text "Facilities that if lost or degraded are expected to result in instances of instability, Cascading, or uncontrolled separation" used in the other standards. The use of different text implies differences that are hard to interpret. We support that the same text should be used in these different standards.

Also, we point out a minor typo in PRC-026-2 :

R1 – (...)

Criteria:

1. Generator(s) where an angular stability constraint exists that is addressed by [a] limiting the output of a generator (...)

Likes 0

Dislikes 0

Response

PRC-002: The SDT believes placing responsibility solely on the Reliability Coordinator adds clarity and consistency for the task of identifying the BES Elements for which Dynamic Disturbance Recording (DDR) is required. The RC and TOP are the entities that identifies and monitors SOLs/IROLs within real time operations. Furthermore the RC is responsible for leading any investigation into events that would use this data. The TP and PC may assist in these efforts or even effectively lead them, but the standards and processes assign the responsibility to the RC. We have addressed the time window for implementation in the PRC-002 implementation plan and updated the standard references in all the documents.

PRC-023: The drafting team revised the language to be more consistent with the other standards and to be limited to planning events. The language allows the Planning Coordinator or Transmission Planner to select circuits that meet those criteria, but doesn't require the PC or TP to select every circuit that meets the criteria, since not every circuit that meets that criteria may be a good candidate for PRC-023.

PRC-026: Thank you the typo was addressed.

Patti Metro - National Rural Electric Cooperative Association - 3,4

Answer

Yes

Document Name	
Comment	
NRECA agrees with the changes to CIP-014, FAC-003, FAC-013, PRC-002, PRC-023 and PRC-026.	
Likes	0
Dislikes	0
Response	
Thank you for your comment.	
Todd Bennett - Associated Electric Cooperative, Inc. - 3, Group Name AECl	
Answer	Yes
Document Name	
Comment	
AECl supports comments provided by NRECA.	
NRECA agrees with the changes to CIP-014, FAC-003, FAC-013, PRC-002, PRC-023 and PRC-026.	
Likes	0
Dislikes	0
Response	
Thank you for your comment.	
Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	Yes
Document Name	
Comment	

Recommend adding the word "Facility" to the below applicability item from FAC-003-5. With the current wording, radial lines that are 200kV or higher are in-scope of FAC-003-5. This modification allows the radial line exclusion to be utilized, but should not otherwise impact the scope of FAC-003.

4.2.1. Each overhead transmission line **Facility** operated at 200kV or higher.

Likes 0

Dislikes 0

Response

Thank you for the comment, the drafting team discussed making this change but ultimately did not since it was not within our scope and we didn't believe the addition of the word substantially changed the meaning of the requirement sub part.

Anthony Jablonski - ReliabilityFirst - 10

Answer Yes

Document Name

Comment

ReliabilityFirst Votes in the Affirmative but provides the following comment for consideration.

For PRC-026-2, R1. Criteria 1, ReliabilityFirst comment on the following proposed language:

"Generator(s) where an angular stability constraint exists that is addressed by a limiting the output of a generator or a Remedial Action Scheme (RAS), and those Elements terminating at the Transmission station associated with the generator(s)."

The "a" between "by" and "limiting" seems out of place and ReliabilityFirst recommends removal.

Likes 0

Dislikes 0

Response

Thank you for your comment, we addressed the stray A

Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford

Answer Yes

Document Name

Comment

GTC agrees with the modifications to the standards impacted by the retirement of FAC-010. Further GTC notes the following:

- The removal of the Planning Coordinator as an entity responsible for Requirement 5 in PRC-002 represents a material change to the Applicability section of the standard. GTC agrees with this change and the SDT's rationale that "placing responsibility solely on the Reliability Coordinator adds clarity and consistency for the task of identifying the BES Elements for which dynamic Disturbance recording (DDR) data is Required."
- The proposed modification to FAC-013 is an improvement to this standard.
- The streamlined language in the proposal for FAC-003 is a much needed improvement.
- The other modifications represent an appropriate replacement for the planning SOL/IROLs.

Likes 0

Dislikes 0

Response

Thank you for your support.

Devin Shines - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF, Group Name PPL NERC Registered Affiliates

Answer Yes

Document Name

Comment

- We believe the proposed language FAC-003, 4.2.2 should be revised for clarity. The proposed R 4.2.2 identifies a line to which the standard is applicable, “Each overhead transmission line operated below 200kV, identified by the Planning Coordinator or Transmission Planner, per its Planning Assessment of the Near-Term Transmission Planning Horizon or its Transfer Capability Assessment (Planning Coordinator only) as a Facility that if lost or degraded are expected to result in instances of instability, Cascading, or uncontrolled separation.”

Based on recent planning assessments and studies related to transfer capability, the PC would not ever add such facilities. If a loss of a single line (whether or not below 200kV) would result in cascading, that would result in the utility failing to comply with TPL-001. Since a PC would have to be compliant with TPL-001-4, the PC would ensure such a sub-200kV line would never be added to the system, resulting in a null set for such lines, rendering 4.2.2 meaningless.

- We also recommend adding the language: “that adversely impact the reliability of the Bulk Electric system” following references to “uncontrolled separation.” This addition would bring the language in alignment with the Glossary of terms definition of IROL.

Likes 0

Dislikes 0

Response

Thank you for your comment. There may be a window of time between when the PC identified the facility and when a corrective action plan or other project was in place to address the issue where FAC-003 could be applied. We also expanded the language to include “adversely impact the reliability of the Bulk Electric System for planning events.”

Preston Walker - PJM Interconnection, L.L.C. - 2 - SERC,RF

Answer

Yes

Document Name

Comment

Clarifying language should be added to PRC-026 Requirement R1 Criteria 1 to indicate that the Reliability Coordinator will provide the information concerning angular stability constraints to the Planning Coordinator. This would be in alignment with the intent of revised FAC-014 R5.2 and its sub-requirements.

Likes	0
Dislikes	0
Response	
<p>The Drafting team discussed this and did not believe it was necessary to prescribe that the Planning Coordinator receive those constraints from the Reliability Coordinator. The standard is written as the Planning Coordinator is responsible for either developing those limits or gathering those limits from the Reliability Coordinator and passing them on. Given that PRC-026 involves relay protection, which is a long term investment, it's appropriate that it be based on longer term problems that the Planning Coordinator studies.</p>	
Jodirah Green - ACES Power Marketing - 6, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	
Comment	
<p>We agree with the changes as they are applied consistently throughout the standards. However, if the SDT changes the approach as stated in the previous comments, these areas will need to be revisited. In terms of FAC-003-5 and CIP-014-3, there may be an un-intended consequence of potentially pulling in facilities below 200 kV for compliance with both standards. The language is also not consistent in the FAC-003-5 applicability section, and the Sustained Outage categories beginning on page 10.</p> <p>Thank you for the opportunity to comment.</p>	
Likes	0
Dislikes	0
Response	
<p>Thank you for your support and the comment on Page 10, the drafting team has addressed the inconsistency.</p>	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP Standards Review Group	
Answer	Yes

Document Name	
Comment	
<p>The SPP Standards Review Group (SSRG) recommends that the drafting team consider IROLs in Phase 2 of this Project 2015-09. As discussed at the September 2018 Planning Committee (PC) Meeting, although this project includes IROLs, the drafting team’s feedback to the PC was to focus on only the SOL for this commenting period (Phase I). During Phase II, the drafting team will put more focus on the IROL. This is a reasonable suggestion given that all relevant materials pertaining to the IROL were approved at that most recent meeting and couldn’t be implemented in the Phase I comment period.</p>	
Likes	0
Dislikes	0
Response	
<p>Thank you for your comment, the drafting team agrees that IROL’s are not within scope for this phase.</p>	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
<p>Texas RE appreciates the SDT reviewing the standards to identify those impacted by the retirement of FAC-010.</p> <p>Regarding the Implementation Plan, under General Considerations, it states that for PRC-002-3, PRC-023-4, and PRC-005-3, the elements of the prior implementations plans shall remain applicable and are incorporated herein by reference. Texas RE’s understanding is that although the effective date of the new proposed versions of these standards is “the first day of the first calendar quarter that is twelve calendar months after the effective date of the applicable governmental authority’s order approving the standards”, the prior versions of</p>	

the implementation plans indicated in the general considerations section remains in place. If this is the case, it may be more clear to list out those exact dates that remain in place for the prior versions of the standards.

Texas RE also recommends including a question about the implementation plan on each comment form going forward to encourage stakeholders to review the implementation plans.

Likes	0
-------	---

Dislikes	0
----------	---

Response

Thank you for the comments, we have gone through and revised the implementation plans which will hopefully address your concerns.

Jack Stamper - Clark Public Utilities - 3

Answer	Yes
--------	-----

Document Name	
---------------	--

Comment

Likes	0
-------	---

Dislikes	0
----------	---

Response

RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC

Answer	Yes
--------	-----

Document Name	
---------------	--

Comment

Likes	0
-------	---

Dislikes 0	
Response	
Laura Nelson - IDACORP - Idaho Power Company - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Downey - Peak Reliability - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sean Bodkin - Dominion - Dominion Resources, Inc. - 6, Group Name Dominion	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Amy Casuscelli - Amy Casuscelli On Behalf of: Michael Ibold, Xcel Energy, Inc., 3, 1, 5; - Amy Casuscelli	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Laura McLeod - NB Power Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
David Jendras - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	

Comment

Likes 0

Dislikes 0

Response

Robert Blackney - Edison International - Southern California Edison Company - 1,3,5,6 - WECC

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Anton Vu - Los Angeles Department of Water and Power - 6

Answer

Document Name

Comment

The question is not clear. We do not have the same position in all the standards listed here.

Likes 0

Dislikes 0

Response

Thank you for the feedback, on future comment forms feel free to address each standard individually in your comment.

Glenn Barry - Los Angeles Department of Water and Power - 5

Answer

Document Name

Comment

The question is not clear. We do not have the same position on all the standards listed here.

Likes 0

Dislikes 0

Response

Thank you for the feedback, on future comment forms feel free to address each standard individually in your comment.

Douglas Johnson - American Transmission Company, LLC - 1

Answer

Document Name

Comment

ATC is not opposed to removing the Planning Coordinator in PRC-002 as an applicable functional entity and having the Reliability Coordinator as the only applicable regional functional entity. However, ATC proposes that the Time Horizon for all the Requirements be revised from "Long-term Planning" to "Operations Planning," to be consistent with the direct and indirect applicability of the Requirements to the Reliability Coordinator.

Likes 0

Dislikes 0

Response

Time Horizon: The drafting believes that these requirements are long term planning (1 year or greater) because when there is a violation there is a window of time to recover from the violation. The Time Horizon is the period of time to mitigate a violation, as such certainly some of the Reliability Coordinator functions are in the Operations Planning horizon, but data recording equipment issues are not a violation that has to be resolved within a day or even within the current season, nor can they be resolved that quickly depending on the lead time on the equipment. Because this equipment is for after the fact analysis, and not the real time prevention of an issue, the longer time horizon continues to be appropriate.

Oshani Pathirane - Oshani Pathirane On Behalf of: Paul Malozewski, Hydro One Networks, Inc., 1, 3; - Oshani Pathirane

Answer

Document Name

Comment

While Hydro One is in general agreement with the proposed retirements and modifications, we recommend the addition of “identified by the Transmission Planner” as follows to the phrase that is to replace occurrences of SOL/IROL:

“Facilities identified by the Transmission Planner that if lost or degraded are expected to result in instances of instability, Cascading, or uncontrolled separation”

This change would clarify that it is the TPs that are expected to identify these facilities for the TOs and TOPs.

Likes 0

Dislikes 0

Response

Thank you for the comment. The SDT revised the wording in all these standards and hopefully the revised wording address your concern.