

Comments for 2nd Draft of SAR for Revise System Operating Limit Methodology in FAC-011-2 to Require Consideration of Credible Multiple Element Contingencies in the Operating Horizon (Project 2008-05)

The Facility Ratings Standards Drafting Team thanks all commenters who submitted comments on the 2nd draft of the SAR to revise the system Operating Limit Methodology in reliability standard FAC-011-2. This standard was posted for a 30-day public comment period from August 12, 2008 through September 10, 2009. The stakeholders were asked to provide feedback on the SAR through a special electronic Standard Comment Form. There were more than 23 sets of comments, including comments from more than 60 different people from approximately 60 companies representing 8 of the 10 Industry Segments as shown in the table on the following pages.

http://www.nerc.com/filez/standards/Facility_Ratings_Project_2008-05.html

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

¹ The appeals process is in the Reliability Standards Development Procedures: <http://www.nerc.com/standards/newstandardsprocess.html>.

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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

Committer		Organization	Industry Segment											
			1	2	3	4	5	6	7	8	9	10		
1.	Phil Parks	British Columbia Transmission Corporation		x										
2.	Guy Zito (NPCC)	NPCC Regional Standards Committee		x										
Additional Member	Additional Organization	Region	Segment Selection											
1.	David Kiguel	Hydro One Networks, Inc.	NPCC	1										
2.	Ralph Rufrano	New York Power Authority	NPCC	5										
3.	Michael Ranalli	National Grid	NPCC	3										
4.	Roger Champagne	Hydro-Québec TransÉnergie	NPCC	2										
5.	Rick White	Northeast Utilities	NPCC	1										
6.	Greg Campoli	New York Independent System Operator	NPCC	2										
7.	Kathleen Goodman	ISO - New England, Inc.	NPCC	2										
8.	Ed Thompson	Consolidated Edison Co. of New York, Inc.		1										
9.	John Babik	Dominion Resources, Inc.	NPCC	5										
10.	Lee Pedowicz	NPCC	NPCC	10										
11.	Gerry Dunbar	NPCC	NPCC	10										
12.	Don Nelson	Massachusetts Department of Public Utilities	NPCC	9										
13.	Brian Evans-Mongeon	Utility Services, LLC	NPCC	6										

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Commenter		Organization	Industry Segment												
			1	2	3	4	5	6	7	8	9	10			
14.	Michael Gildea	Constellation Energy	NPCC			6									
3.	Chris Thibodeaux	CLECO Power LLC		x		x									
4.	Dan Rochester	Independent Electricity System Operator			x										
5.	Roman Carter	Southern Company Transmission		x											
Additional Member		Additional Organization	Region	Segment Selection											
1.	Marc Butts	Southern Transmission	SERC	1											
2.	JT Wood	Southern Transmission	SERC	1											
3.	Jim Busbin	Southern Transmission	SERC	1											
4.	Bobby Jones	Southern Transmission	SERC	1											
5.	Rod Hardiman	Southern Transmission	SERC	1											
6.	Raymond Vice	Southern Transmission	SERC	1											
6.	John P. Mayhan	Omaha Public Power District		x		x		x	x						
7.	Paul Rocha	CenterPoint Energy		x											
8.	Edward J Davis	Entergy Services		x		x		x	x						
9.	Eric Mortenson	Exelon		x		x		x							
10.	Terry L. Blackwell	Santee Cooper		x											
Additional Member		Additional Organization	Region	Segment Selection											
1.	S. Tom Abrams	Santee Cooper	SERC	1											
2.	Glenn Stephens	Santee Cooper	SERC	1											
3.	Vicky Budreau	Santee Cooper	SERC	1											
4.	Jim Peterson	Santee Cooper	SERC	1											
5.	Rene' Free	Santee Cooper	SERC	1											
11.	Greg Rowland	Duke Energy Corporation		x		x		x	x						
12.	Kirit Shah	Ameren		x		x		x	x						
13.	Thad Ness	AEP		x		x		x	x						
14.	Sammy Roberts	Progress Energy Carolinas, Inc.		x		x		x							
15.	Alan Gale	City Of Tallahassee		x		x		x							
16.	Patrick Brown	PJM Interconnection			x										
Additional Member		Additional Organization	Region	Segment Selection											
1.	Bill Harm	PJM Interconnection	RFC	2											

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Committer	Organization	Industry Segment									
		1	2	3	4	5	6	7	8	9	10
2. Rebecca Berdahl	Power Long Term Sales and Purchases WECC			3							
23. Tony Kroskey	Brazos Electric Power Cooperative, Inc.	x									
24. Jason Shaver	American Transmission Company	x									

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1. In proposing modifications to FAC-011-2, the SAR DT assumes that most Reliability Coordinators are already setting IROLs based on common mode Contingencies that result in loss of two or more (multiple) elements. Do you agree with this assumption?

Organization	Question 1:	Question 1 Comments:
BCTC	Yes	<p>We interpret the phrase "common mode Contingencies that result in the loss of two or more (multiple) elements" to mean "Category C contingencies" or "the multiple contingencies identified in Reliability Standard TPL-003". We would encourage the drafting team to use one of these latter two phrases and not introduce another description that may need definition.</p> <p>The utilities in the western interconnection adopted a policy/practice, following the disturbances of 1996, of determining operating limits for the system actually in operation at any given time based on the full set of NERC and WECC Planning Standards. Many utilities also adopted a policy of "if you have not studied it, do not go there". The concept is that operators should always be aware of study based reliability limits of the actual system they are operating. WECC RMS tracked violations of these operating limits. We assume that Reliability Coordinators in the west have adopted this policy as well. If they have not, they are risking cascading and uncontrolled separation for credible multiple contingencies.</p> <p>Category C contingencies are often addressed with RAS to shed load or generation. This is in fact the purpose of Category C, to make it clear that such actions are acceptable. If Reliability Coordinators and operators are not considering Category C contingencies for the actual operating conditions and arming the RAS, what is the point of planners providing RAS for Category C contingencies. This brings into question the whole point of TPL-003.</p>
NPCC	Yes	
CLECO	Yes and No	
Independent Electricity System Operator	No	Based on comments on the first posting alone, we are unable to determine if the majority of the RCs are already setting IROLs based on common mode contingencies that result in the loss of 2 or more elements. Even a survey might not truly indicate if there is a majority since some RCs may indicate that they do but on a selective basis. A sure way to ensure every RC does this consistently is to enforce such a requirement through standards.
Southern Company Transmission	No	We do not know what most of the RCs are basing their IROLs on. Is it safe for the SAR drafting team to assume something such as this unless data is provided to back up the statement?
Omaha Public Power District		
CenterPoint Energy		
Entergy Services	Yes	

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Organization	Question 1:	Question 1 Comments:
Exelon	Yes and No	RC to comment.
Santee Cooper	No	
Duke Energy Corporation	No	Since we are unsure of the definition of "common mode Contingencies", we can't agree with this assumption.
Ameren	No	
AEP		
Progress Energy Carolinas, Inc.	No	All RCs would have to be surveyed to determine if this assumption is accurate. One would assume that RCs consider all "credible" contingencies.
City Of Tallahassee	No	"common mode" is not defined... so what is meant? How did the SARDT make this assumption? I would assume that most RC's are using N-1 and only "credible multiple contingencies" in real time. TPL standards address the planning issues and are used to determine if Special Protection Schemes are needed to meet the performance criteria.
PJM Interconnection	Yes	The RC's with which PJM coordinates have processes in place, and documentation of those processes, to identify and include credible Category B and C contingencies in their near-term Operations Planning.
ERCOT	Yes and No	It is unclear what standards are commonly used for setting IROLs in different regions. A review of comments indicates that practices may vary widely. It is also unclear what is meant by common-mode Contingencies.
Midwest ISO Stakeholders Standards Collaborators	No	There is currently not a requirement to operate and honor N-2 contingencies in the operating horizon at all times. The current FAC-011-2 R2. does specify that "following the single contingencies identified in Requirement 2.2.1. through Requirement 2.2.3., the system shall demonstrate transient, dynamic and voltage stability"; it does not specify multiple contingencies.
NERC Standards Review Subcommittee	No	There is currently not a requirement to operate and honor N-2 contingencies in the operating horizon at all times. The current FAC-011-2 R2. does specify that "following the single contingencies identified in Requirement 2.2.1. through Requirement 2.2.3., the system shall demonstrate transient, dynamic and voltage stability"; it does not specify multiple contingencies. The MRO would like to clarify that this is about N-1 events with multiple elements, not N-2 contingencies.
Manitoba Hydro	No	MH doesn't agree with this assumption. Although some types of multiple element common mode contingencies are used in setting the IROLs by some Reliability Coordinators, the most limiting types such as a multiple circuit tow line is rarely used for setting the IROLs by most Reliability Coordinators.
FRCC Staff	No	The current methodology typically utilized in the majority of the industry is based on planning and operating to single contingencies. Part of Reliability Coordination is to assume conservative modes of operation when a threat is identified to the BES. This would include common mode contingencies (i.e. Double Circuit Tower (DCT) failures) if they are identified as a potential or credible contingency.
Bonneville Power Administration		

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Organization	Question 1:	Question 1 Comments:
Brazos Electric Power Cooperative, Inc.		
American Transmission Company	No	<p>The phrase "common mode contingency" is a common term but with multiple definitions. Because of the multiple definitions with this term we believe that the SDT identify the foundation for how the RC's must define this term. The RC can take into consideration their area and practices but we are concerned that just putting this out with no context/foundation will lead to problems. We strongly suggest that the SDT reviews the NERC TADS document along with the SOL/IROL Reliability paper. Both of these papers have a definition of common mode outages that can be utilized to define the foundation for the RC to define their common mode contingency. It is our position that the SDT must define the foundation for how the RC will define this term in order for this effort to move forward.</p>

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2. The initial SAR has been revised to clarify that it was not meant to include all Contingencies that result in loss of two or more elements. Rather the focus is on those common mode Contingencies that result in loss of two or more (multiple) elements, which are associated with potential IROL system conditions. Do you agree with the proposed change? If not, please provide specific comments.

Organization	Question 2:	Question 2 Comments:
BCTC	Yes and No	<p>We can accept the clarification, but for the limited scope of RCs determining IROL violations. The RC should not be required to undertake comprehensive studies, but should get assistance from the PC which identifies the most limiting SOLs and the conditions and contingencies that lead to these limits. RCs are responsible for monitoring IROL system conditions, but not SOLs that are the responsibility of TOPs. Functional Model Version 4 states: "Thus, the Reliability Coordinator needs a "wide-area" view that reaches beyond its boundaries to enable it to operate within Interconnection Reliability Operating Limits." It further states: "Develops Interconnection Reliability Operating Limits, based on Transmission Owners' and Generator Owners' specified equipment ratings, and provides them to Transmission Operators." and "Assists Transmission Operators in calculating and coordinating System Operating Limits." Therefore, this SAR, applicable to RCs, is consistent with the Functional Model.</p> <p>With the expanded applicability removed, FAC-011 needs further revisions to clarify that it is limited to IROLs. This includes the title and numerous uses of the term SOL throughout the standard.</p>
NPCC	Yes and No	This is an incremental improvement. Concern that not all thermal overload conditions will be considered.
CLECO	Yes and No	I agree that it should not be all multiple contingencies. However it would require a concerted effort on the part of the RC to perform detailed assessments encompassing various operating conditions in order to determine which element set whose contingency would lead to an IROL. Needless to say the RC would be faced with a Herculean task resulting in a tendency to adopt harsh measures such as lines running for a defined distance in the same right-of-way being treated as a single contingency or perhaps those sharing the same structure being designated as such.
Independent Electricity System Operator	Yes and No	We generally agree. However, if the objective is to arrive at a consistent approach across the continent, then the degree of freedom should be restricted by requiring all RCs adopt the same set, or a defined subset, of the contingencies that are included in the planning standard (the proposed TPL-001) in FAC-011. This set of contingencies should apply regardless of the reliability phenomenon, i.e. stability or voltage depression/collapse or simply facility overload, since the latter phenomena, if not studied to assess the need for imposing IROL, may result in uncontrolled tripping of other facilities, leading to cascading outages.
Southern Company Transmission	No	Reference the revised SAR, Detailed Description section where the summary provides the following for Requirement R3: "The wording proposed will allow flexibility for the RC to explain its criteria for the selection of common mode Contingencies that result in loss of two or more (multiple) elements that are associated with potential IROL conditions." The current SAR requires the RC to explain (justify?) its criteria. There is inconsistency between the detailed description and the standard Requirement 3. The SAR is in conflict with FAC-010. FAC-010 says that multiple contingencies should be studied by Planning and any resulting SOL (from which

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Organization	Question 2:	Question 2 Comments:
		IROLs are derived) should be supplied to Operations. This SAR implies that the RC must perform ALL lower probability contingencies for the operating environment. This appears to be impractical. The revised Standard provides at R3.2.1 the following: "Criteria for selection of common mode Contingencies that result in loss of two or more (multiple) elements that are defined as potential IROL's. We note an inconsistency between the 'SAR' phrase "associated with potential IROL conditions" and the 'Standard' phrase "defined as potential IROL's".
Omaha Public Power District		
CenterPoint Energy	No	CenterPoint Energy believes the revised SAR and proposed standard revisions are overly prescriptive and unnecessary as described in response to Q5.
Entergy Services	Yes and No	As revised, the SAR has "credible" only in the title as a qualifier of what contingencies need to be studied. In the text of the SAR the term used is "applicable" or "common mode". In the draft standard "applicable" has been deleted and "common mode" is the qualifier. Please use the same terminology throughout the documents and define the terms as they are to be applied in this standard. We suggest "credible" and "applicable" be deleted as qualifiers to contingency and only the term "common mode" be used in this SAR and any resulting changes to the standards.
Exelon	No	We agree with the change to eliminate all multiple contingencies, as it would not be feasible to perform these studies. However, we question the ability of real time tools to perform these multiple contingency analyses in the 'operating horizon'. It should be made clear that there is not an expectation to identify multiple contingencies that can lead to a possible IROL as the transmission configuration changes daily. The multiple contingencies that should be studied in operations will come from the planning-identified IROLs. Single contingencies are defined in the existing Standard. Multiple contingencies are not. The SAR should include a recognition of the need for this definition if multiple contingencies are included.
Santee Cooper	No	Common mode Contingencies needs to be defined.
Duke Energy Corporation	No	We do not agree with the proposed change. We are unsure how the definition of "common mode Contingency" differs from multiple Contingencies that are already studied as required by FAC-010-2 requirement R2.5
Ameren	No	(1) The current FAC-011-2 R3.3 has already covered the process by which stability limits associated with the list of multiple contingencies is included. (2) If the SDT decides to move forward with the changes, need to clearly define what is meant by "common mode" contingencies. While this is a generally used term, there may exist number of different interpretations. However, the standard should not be ambiguous about it.
AEP	No	This issue was clearly and fully vetted during the development of Version 2 of this Standard, and this explicit concept did not rise to "industry consensus". Also, the proposed requirement R 3.2.1 appears to be a subset of existing requirement R 3.3. Therefore, this change is of minimal benefit and should not move forward.
Progress Energy Carolinas, Inc.	No	Real time operations horizon should consider all "credible" contingencies as identified by the IROL methodology for the operations horizon. The current standard requirements associated with SOL/IROL determination methodology and application are sufficient to ensure system reliability.

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Organization	Question 2:	Question 2 Comments:
City Of Tallahassee	Yes and No	While I am all for reducing the burden on the Contingency Analysis programs, I disagree with the entire SAR so I have to say yes and no.
PJM Interconnection	No	PJM does not agree with the need for the SAR. Current NERC standards sufficiently cover the proposal to include Credible Multiple Contingencies identified by the Planning Authority in operating analyses.
ERCOT	No	The definition of common mode contingency is unclear and therefore open to a wide array on interpretations. This ambiguity is troublesome when a new requirement is being established.
Midwest ISO Stakeholders Standards Collaborators	No	The current FAC-011-2 R3.3. has already covered the process by which stability limits associated with the list of multiple contingencies is included. If it was clear what was meant by common mode contingencies, it would be easier to judge if R3.3 thus satisfies the common mode contingencies. Common mode contingencies can be interpreted very widely. Some concepts would include: generators sharing the same water intake, generation plants operating from the same body of water such as a single river, breaker failure, common tower, common right of way or any identical piece of equipment in a substation that is common to many substations and has been determined to have a high failure rate.
NERC Standards Review Subcommittee	No	The current FAC-011-2 R3.3. has already covered the process by which stability limits associated with the list of multiple contingencies is included. The MRO would like a definition of common mode contingencies. Consideration should be given to how we transition to the operating horizon from the TPL standards. After all the TPL standards are to provide the margin above and beyond the operating horizon. Is the MRO required to assume random failure of one device that can remove one or more units from operation, e.g. a breaker controlling two lines? Does the MRO need to consider two random failures of separate devices, unrelated devices; e.g., a transformer in a substation and an unrelated transmission line? Does the MRO have to assume a single event, severe weather that can remove multiple pieces of equipment?
Manitoba Hydro	Yes	
FRCC Staff	No	The proposed changes, to be more prescriptive about the inclusion of common mode contingencies, will establish more restrictive SOLs/IROLs which may not allow for the optimum performance of the Bulk Electric System and subsequently have adverse affects meeting current planning criteria and will hinder normal market activities.
Bonneville Power Administration	Yes	
Brazos Electric Power Cooperative, Inc.	No	
American Transmission Company	No	The current FAC-011-2 R3.3. has already covered the process by which stability limits associated with the list of multiple contingencies is included. The SDT has not clearly identified the purpose between this effort and what is already covered in FAC-011-2. Additional justification and clarify is needed to draw out this distinction.

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3. The SAR was also revised to ensure greater transparency on how the Reliability Coordinator considers information received from the Planning Coordinator relating to SOLs/IROLs. Do you agree with this change? If not, please provide specific comments.

Organization	Question 3:	Question 3 Comments:
BCTC	No	The proposed modifications applicable to RCs for determining IROLs are acceptable, but only go part way to defining the requirements. This standard needs to be clear that the RC methodology shall include a requirement that following any common mode contingencies that are defined as potential IROLs, that the system shall demonstrate transient, dynamic, and voltage stability; and cascading and uncontrolled separation shall not occur. Please see our suggestions in response to question 7.
NPCC	Yes	
CLECO	Yes and No	I agree that there should be greater transparency however the SAR doesn't force the RC to use the Planning Coordinators information.
Independent Electricity System Operator	Yes	It should also require the RC to provide the reasons for deviating from the information provided by the PC, which includes the contingencies applied in determining SOLs and IROLs.
Southern Company Transmission	No	Ensuring all RCs consider information from the Planning Coordinator in the same manner would mean the SAR drafting team is assuming the contingency studies provided to the RCs are also transparent. The information contained in Contingency studies vary from RC area to RC area and may be viewed differently based on the circumstances presented to the RC.
Omaha Public Power District	Yes	
CenterPoint Energy	No	CenterPoint Energy believes the revised SAR and proposed standard revisions are overly prescriptive and unnecessary as described in response to Q5.
Entergy Services		
Exelon	Yes	
Santee Cooper	No	This additional requirement does not appear to add any value.
Duke Energy Corporation	No	A reasonable level of transparency is provided by requirement R5, which provides an opportunity for any recipient to challenge the RC's methodology, and a response is mandated. This provides a reasonable avenue to address any specific areas of reliability concern.
Ameren	Yes	
AEP	No	Requirements R4 and R5 already allow and encourage a technical peer review, and therefore this proposed change is largely redundant.
Progress Energy	No	The proposed changes will not provide increased understanding (transparency) of the RC's monitoring of IROL's.

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Organization	Question 3:	Question 3 Comments:
Carolinas, Inc.		
City Of Tallahassee	Yes and No	While greater transparency is always good, is that really being achieved? Why are we pursuing a "perceived gap"? Again, since I disagree with the entire SAR, I have to say No.
PJM Interconnection	No	The current FAC-011-2 Requirement 3.3 specifies the need for a process, and a description of that process, for using the multiple contingency list provided by the Planning Authority. The proposed mandate to provide documentation of how this process is carried out is unnecessary and provides no more transparency than the current standard.
ERCOT	No	A requirement to provide documentation describing how a required process is executed is overly burdensome and does not necessarily result in improved reliability or increased visibility for other reliability areas. FAC-014-1 R5.1 already requires the communication of the SOLs and the subset of IROLs to affected parties. The new requirement serves no useful purpose.
Midwest ISO Stakeholders Standards Collaborators	Yes	
NERC Standards Review Subcommittee	Yes	The MRO agrees with the current focus but the first paragraph in the "Industry Need" section of the SAR needs to be revised; the first sentence is a fragment not a complete sentence.
Manitoba Hydro	Yes	
FRCC Staff	No	FAC-011-2 R3.3 provides sufficient detail to ensure the inclusion of multiple contingencies provided by the Planning Authority. The proposed revision does not ensure any greater transparency beyond what is established by the current standard.
Bonneville Power Administration	Yes	Provides greater clarity, but not necessarily greater transparency.
Brazos Electric Power Cooperative, Inc.	No	
American Transmission Company	No	Stronger and clearer language needs to be provided to define what the RC is expected to do with the information received from the Planning Coordinator. "Consider" is not adequate. We propose language such as "review, document findings and provide a mitigation plan" within a recommended time period.

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4. To expedite the work of the Drafting Team the SAR is accompanied by the proposed changes in FAC-011-2 to accomplish the SAR's objectives. Do you agree with the changes proposed in FAC-011-2? If not, please provide specific comments.

Organization	Question 4:	Question 4 Comments:
BCTC	No	See response to question 3. These changes are acceptable provided that FAC-011 also requires the RC methodology to state that following common mode contingencies the system shall demonstrate transient, dynamic, and voltage stability; and cascading and uncontrolled separation shall not occur. However, they are inadequate to address the reliability requirements for determining SOLs that are not IROLs. For determining SOLs, FAC-011 needs to require consideration of all Category C contingencies. We are unclear if "common mode Contingencies" are the same as Category C. If they are the same, why introduce a new term? If they are not the same, what are common mode Contingencies and do they need to be credible? Each SOL Methodology for the Operations Horizon needs to ensure that for precontingency conditions of one or more lines forced out of service or other unplanned conditions "the system shall demonstrate transient, dynamic, and voltage stability and Cascading outage or uncontrolled separation shall not occur." Is there any disagreement with this? Please see our suggestions in response to question 7.
NPCC	Yes	
CLECO		
Independent Electricity System Operator	No	(1) R3.2.1 states: "Criteria for selection of common mode Contingencies that result in loss of two or more (multiple) elements that are defined as potential IROLs." The phrase "that are defined as potential IROLs" is unclear since it may refer to the contingency criteria. Further, Sub-requirement R3.2.1 does not seem to be necessary since R3.2 simply says apply R3.2.1 and hence the two can be combined. We therefore propose to revise R3.2 to read: "Selection of contingencies and the criteria for selecting common mode Contingencies that result in loss of two or more (multiple) elements and the identification of an SOL as an IROL."(2) The Measures and VSLs need to be revised to reflect changes to the requirements.
Southern Company Transmission	No	The SAR is in conflict with FAC-010. FAC-010 says that multiple contingencies should be studied by Panning and any resulting SOL (from which IROLs are derived) should be supplied to Operations. This SAR implies that the RC must perform ALL lower probability contingencies for the operating environment. This appears to be impractical. The SAR uses the term IROL when it should use the term SOL. Not all of the problems uncovered would be an IROL. For example, the SAR says undamped oscillations would be an IROL. NOT TRUE. The oscillations could affect one generating plant only. In that particular case, it would be an SOL, not an IROL. One of the examples of a "single contingency, multiple elements out" is not a single contingency. A fault followed by a stuck breaker is a multiple contingency. The new TPL standard under development makes this very clear. Most of the extreme events listed should be removed from the SAR (except possibly the d., three-phase fault with a stuck breaker). It would be an "overkill" to have, for example, an operating limit based on the remote chance of losing an entire generating plant or sudden dropping of a major load center.

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Organization	Question 4:	Question 4 Comments:
Omaha Public Power District		
CenterPoint Energy	No	CenterPoint Energy believes the revised SAR and proposed standard revisions are overly prescriptive and unnecessary as described in response to Q5.
Entergy Services	No	The wording of the new sub-requirement is not worded clearly - contingencies are not IROLs but certain contingencies can lead to IROL conditions. We suggest rewording the requirement similar to the following: R3.2.1. Criteria for selection of common mode Contingencies that result in the loss of two or more (multiple) elements that are associated with potential IROL conditions.
Exelon	No	It is inappropriate to include a red-lined standard as part of a SAR. It should only be used as a discussion item within the SDT. The SAR commenting process should be separate from gathering comments on a draft standard. If the rules are applied literally, the only changes to a standard allowed are those provided in the SAR, which in this case could be considered to be the draft standard.
Santee Cooper	No	We do not agree with the SAR.
Duke Energy Corporation	No	We don't see a reliability-based need for these changes.
Ameren	No	Please see our comments to Question 2.
AEP	No	See previous comments. Also proposed Requirement R1.4 contains circular logic. The proposed R1.4 says "Include a description of how the list of SOLs (including the subset of SOLs that are IROLs) received from the Planning Authority (in accordance with FAC-014-2 Requirement R5.3) is used in creating its methodology". Question: (paraphrasing the proposed requirement) How can a "description of how the list..." is used in creating a Methodology? The "Methodology should state how the list is used to create SOLs, not the reverse.
Progress Energy Carolinas, Inc.	No	Existing reliability standards (i.e. FAC-010-2, -011-2, and -014-2) are sufficient for RC requirements related to SOL/IROL determination methodology and application.
City Of Tallahassee	No	R1.4 is not necessary since using the PA supplied data can be addressed in R1.3 entirely. R3.2.1 should be part of R3.2. It does not make sense to have this single item a sub-requirement. Again, I disagree with this entire SAR. The wording as proposed does not require the RC to use ANY of the list provided by the PA if the RC's methodology is stated in such a way. Was that the drafter's intent?
PJM Interconnection	No	The proposal is to (a) provide a description of how a list is used; and (b) include an explanatory statement for credible multiple contingencies. PJM prefers NERC standards that mandate an outcome rather than a process. The former proposal is merely a narrative of how a list is used. As noted above, the current standard already requires identified credible contingencies be included.
ERCOT	No	A requirement to provide a documentation describing how a required process is executed is overly burdensome and does not necessarily result in improved reliability or increased visibility for other reliability areas. FAC-014-1 R5.1 already requires the communication of the SOLs and the subset of IROLs to affected parties. The new requirement serves no useful purpose. The Proposed R3.2.1 uses the terms "common mode". The meaning of

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Organization	Question 4:	Question 4 Comments:
		"common mode" is not clear. The Proposed changes in capitalization in R3.3 many not be complete. While "Stability" is a defined term, so is "Stability Limit". Which is intended? In addition, the proposed language assumes that a "list" of SOLs exists and/or is received from the PA. Currently, a list is not part of the requirement.
Midwest ISO Stakeholders Standards Collaborators	No	We do not agree that R3.2.1 is needed. Given the work of the Reliability Coordination standards drafting team, we believe this SAR is premature. R1 IRO-001-2 addresses the issue that R3.2.1 appears to be addressing. It requires that an RC direct actions to prevent and mitigate Adverse Reliability Impacts. A contingency that could cause cascading would appear to fit into this requirement.
NERC Standards Review Subcommittee	Yes	
Manitoba Hydro	Yes	
FRCC Staff	No	As written, the current version of FAC-011-2 does not need to be revised because it provides the appropriate balance between the level of reliability and fully utilizing the system to support market transfers.
Bonneville Power Administration	Yes	
Brazos Electric Power Cooperative, Inc.	No	
American Transmission Company	No	Please see our comments to question 1 and 2.

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5. Do you agree there is a reliability related need for the proposed standard revisions?

Organization	Question 5:	Question 5 Comments:
BCTC	Yes	<p>There is a need for the revisions, but the proposed revisions fall short of what is needed.</p> <p>We are puzzled by many of the comments on the 1st draft of the SAR. For example, some commenters appear to oppose the need to study all multiple contingencies or question what is meant by credible multiple contingencies. We would clarify that credible multiple contingencies are those listed under Category C and the proposal is to address only Category C multiple contingencies, not all multiple contingencies. The draft standard should be revised to clarify this.</p> <p>Some commenters express a concern with studying multiple contingencies "in" real time. Our response would be that multiple contingencies should be studied in advance "for" real time. This would be the responsibility of the operations planner.</p> <p>Some commenters express a concern with having to consider Category C.3 for actual operations. However, comments indicate that some areas already manage to Category C.3 in real time. As one commenter points out, "The major system disturbances in August 1996 and August 2003 were both results of sequential single contingencies not multiple element forced outages." All that is required to meet C.3 is to make system adjustments following an N-1 outage and arm some load shedding for the next N-1. If operators are not managing to C.3, why would we have this in the TPL standards?</p>
NPCC	Yes	
CLECO	Yes and No	<p>Yes & No, load centers do need to be designed to a high level of reliability (N-1, N-1, and G-1); however painting with the same brush major metropolitan areas as well as the rest of the North America grid may not be practical since this approach may not be supported by historical events. Cleco Power is concerned that some voice be given to the individual entities in the determination of what's deemed to be credible multiple contingencies since it could result in burdensome costs and difficulty in justifying designing a system to such standards when trying to recover such a capital outlay.</p>
Independent Electricity System Operator	Yes	<p>The IESO fully agrees that there is a reliability need for the proposed changes. This will give us a sense of reliability assurance since we are interconnected with entities that may not adopt the same contingency criteria as we do. The IESO disagrees with comments by some that because the planning assumptions (conditions) are different from the operation conditions, therefore the set of credible contingencies to be considered would be different. We hold the view that the BPS is planned to meet future operation's need and as such, should be operated with the capability to withstand the same contingencies considered by planners. Further, despite the assumed system conditions being different, the BPS is exposed to the same types of credible contingencies regardless of timeframe. To ensure reliability, the BPS should be planned and operated in accordance with the</p>

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Organization	Question 5:	Question 5 Comments:
		same contingency and performance requirements.
Southern Company Transmission	No	Requirement 3.3 of the existing FAC-011-2 standard already require the RC to determine which stability limits associated with multiple Contingencies are applicable for use in the operating horizon. This SAR goes beyond what the Commission envisioned the FAC-011 standard was intended to accomplish and has stated the FAC-011 methodology already requires the RC to determine SOLs by considering both the multiple contingencies provided by the Planning Coordinator.
Omaha Public Power District	Yes	The proposed standard revisions will help clarify how multiple contingencies are to be considered.
CenterPoint Energy	No	CenterPoint Energy disagrees that there is a reliability-based need for the proposed standard revisions. Furthermore, the SAR drafting team responded to the previous draft, "Most commenters from outside the NPCC Region indicated that there is not a reliability-related need for the proposed standard revision?" Also, the Commission has previously considered and rejected NYSRC's proposal. Specifically, the Commission found in Order No. 705, paragraph 79, "The Commission does not agree with NYSRC and NYISO's suggestion that FAC-011-1 must be revised so that SOLs for the operating horizon are determined based on both single and multiple contingencies." CenterPoint Energy is disappointed that the SARDT has continued to waste their time and the rest of the industry's time when both the industry and the Commission have been exceedingly clear about the lack of merit in this proposal. The proposed revisions still add overly prescriptive layers of additional documentation to existing requirements even though the need for such additional burden has not been demonstrated and in fact has been clearly rejected by both industry and the Commission. Rather than trying to revive or salvage a bad idea, it would be a refreshing change for the SARDT to realize that sometimes the answer to a request for a new or revised standard is "no". CenterPoint Energy strongly recommends that the SARDT listen to industry comments and act on those comments by rejecting this SAR. If the NPCC region still desires the proposed revisions, the region can pursue a Regional Standard.
Entergy Services	Yes and No	R1.4 seems prudent since there is already a requirement for the PA to provide the information. The RC should consider the information. Changes and additions to 3.2 appear less necessary and seem to only serve as clarifications. See non-NPCC comments from the previous posting. However, we do not see an issue if these changes are implemented.
Exelon	Yes	Clarification is needed to provide consistency with FERC Order 705 as well as treatment of multiple contingencies.
Santee Cooper	No	
Duke Energy Corporation	No	We don't see a reliability-based need for these changes.
Ameren	No	The current FAC-011-2 standard already covers most if not all of the issues.
AEP	No	See previous comments.
Progress Energy	No	Existing reliability standards are sufficient for RC requirements related to SOL/IROL determination methodology

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Organization	Question 5:	Question 5 Comments:
Carolinas, Inc.		and application.
City Of Tallahassee	No	This was answered by industry consensus last round.
PJM Interconnection	No	There is no need for the SAR. The current NERC standards already require the outcomes that this SAR is addressing.
ERCOT	No	The present level of reliability is considered to be sufficient. The supposed benefits of the new requirements proposed in this SAR have not been established.
Midwest ISO Stakeholders Standards Collaborators	No	The current FAC-011-2 standard already covers most if not all of this issue.
NERC Standards Review Subcommittee	No	The MRO agrees with the current focus but the first paragraph in the "Industry Need" section of the SAR needs to be revised; the first sentence is a fragment not a complete sentence.
Manitoba Hydro	Yes	MH agrees that common mode failure of some specific multiple elements that are physically or electrically related may be likely and applicable and should be considered in determining SOLs that are defined as potential IROLs. The criteria for selection of these common mode Contingencies must include an analysis of historical common multiple element contingencies, their potential consequences and an assessment of their impact on reliability so that guidelines for identifying credible multiple element contingencies can be developed.
FRCC Staff	No	The current standard supports methodologies that have produced the appropriate level of reliability. The proposed changes will have an adverse market impact and will also provide minimal, if any perceived increase in system reliability. Any improvements would be very difficult to identify.
Bonneville Power Administration	Yes	
Brazos Electric Power Cooperative, Inc.	No	Brazos Electric agrees with comments submitted by CenterPoint Energy that the proposed revisions are overly prescriptive and unnecessary.
American Transmission Company	No	The current FAC-011-2 standard already covers most if not all of this issue.

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6. The applicability of the SAR has been revised to reflect only the Reliability Coordinator as being a responsible entity affected by this SAR. Do you agree that the SAR applicability accurately indicates the responsible entity(s) impacted by the proposed standard actions?

Organization	Question 6:	Question 6 Comments:
BCTC	No	<p>We do not agree that only the RC has sole responsibility for operating limits in the operations horizon. We also believe comments on the first draft support this. There were 28 comments submitted in response to Question #3. Ten commenters indicated "Yes", they agree with the proposed broader applicability. In addition, three commenters, BCTC, Tallahassee, and Dominion VA, agree that the applicability should be expanded to one or more additional functions. One commenter, ERCOT (2) is not clear. Only five commenters clearly indicated that they oppose the additional applicability. The remaining nine offer no comment on the applicability. Therefore, the "Yes" votes outnumber the "No" votes. BCTC indicated that we believe that the standard should be applicable to Planning Coordinators. However, after reviewing the comments, we would agree with expanding applicability to a minimum of TOPs and are willing to support the position of the majority, applicable to RC, TOP, PC, and TP, if necessary. It is not clear to us why the SAR has been changed to limit applicability to the RC given that the majority support wider applicability.</p> <p>Furthermore, the Functional Model assigns responsibilities for operations horizon limits to both the RC and the TOP. The RC is responsible for IROLs and the TOP is responsible for SOLs in the Operations Horizon. There is currently no NERC Reliability Standard addressing the TOP responsibility. See our comments at questions 2 and 7.</p>
NPCC	Yes	Agree that the changes proposed only affect the RC, however, the applicability of the standard should remain the same.
CLECO	Yes and No	While we agree that the RC should have the final say in reliability, it is of concern that the RC could implement costly measures on the individual entities without the historical need or greatly increased reliability which would justify the cost of proposed transmission projects.
Independent Electricity System Operator	Yes	The current FAC-011 applies to the RC only. Based on the scope of this SAR and the redline changes to the standard, we do not see the need to include other entities at this time.
Southern Company Transmission	Yes	
Omaha Public Power District		
CenterPoint Energy	Yes	As stated previously, CenterPoint Energy believes the revised SAR and proposed standard revisions are overly prescriptive and unnecessary. However, if the SAR and proposed standard revisions proceed, then CenterPoint Energy agrees that the applicability should remain solely with the Reliability Coordinator, the entity with the Wide

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Organization	Question 6:	Question 6 Comments:
		Area view and the responsibility for the reliable operation of the Bulk Electric System.
Entergy Services	Yes	
Exelon	Yes	
Santee Cooper	Yes	
Duke Energy Corporation	No	We don't believe any changes are necessary to FAC-011-1.
Ameren	Yes and No	Besides RC, the impacted entity (e.g. TOP) should be clearly indicated.
AEP		
Progress Energy Carolinas, Inc.	Yes	
City Of Tallahassee	Yes and No	While the RC is the one that will have to provide the paperwork, everyone will be affected by the subsequent reduction in ATC and other restrictions for economic dispatch.
PJM Interconnection	Yes	
ERCOT	No	While the RC is responsible for ensuring that SOLs are established, the impact of the new requirements could have operational affects on multiple TOPs.
Midwest ISO Stakeholders Standards Collaborators	Yes and No	We agree with the applicability from a requirements perspective. That is that the requirements only apply to the RC. However, all TOPs will be indirectly impacted by these requirements.
NERC Standards Review Subcommittee	No	Based on the current terminology of "applicability", we agree that this FAC standard will only be applicable to the RC; however, all TOPs and TOs will be impacted by the RC's decision.
Manitoba Hydro	Yes	
FRCC Staff		
Bonneville Power Administration	Yes	Was not able to find revision, but agree that Reliability Coordinator is the responsible entity.
Brazos Electric Power Cooperative, Inc.	Yes	
American Transmission Company	No	Based on the current terminology of "applicability", we agree that this FAC standard will only be applicable to the RC; however, all TOPs and TOs will be impacted by the RC's decision.

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7. Are there any other issues that need to be addressed? Please be specific.

Organization	Question 7 Comments:
BCTC	<p>We have some suggestions that might help find a common ground for agreement.</p> <p>There has been considerable discussion regarding whether the system should be operated to the same criteria as it is planned. The resolution of this may be in how we interpret the planning criteria. For the Operations Horizon, we can define two conditions: "Planned Operating Conditions" and "Unplanned Operating Conditions". Planned Operating Conditions would be those conditions that were considered by the planners in the Planning Horizon - e.g. precontingency conditions of all lines in service, forecast loads and transfers, certain maintenance outages, etc. Unplanned Operating Conditions would be those conditions that were not considered in the Planning Horizon - e.g. forced outage conditions, loads and transfers higher than forecast, maintenance outages that were not planned for, etc. For Unplanned Operating Conditions, we would suggest that Category C events (contingencies identified in TPL-003) would be considered but the only system performance limit would be that Cascading outages or uncontrolled separation shall not occur. Thermal limits and voltage and frequency deviation ratings would not apply (unless violation would result in Cascading or uncontrolled separation). Loss of demand and firm transfers would be permitted. We believe that the above Unplanned Operating Conditions performance is permitted by the TPL Standards. For example, C.3 addresses only N-1-1. Therefore, an N-1-2 would be a Category D. We suggest that during unplanned operating conditions (e.g. N-1 or higher) it is prudent to make system adjustments and arm RAS so that should an N-2 occur, Cascading or uncontrolled separation shall not occur. Only during Planned Conditions would performance equivalent to R2.4 of FAC-010 be required. If we can reach agreement on this sort of framework, we believe we can sort out the details of how to deal with stability and what the words might be needed related to each of the System Limits or Impacts columns in TPL-003, Table 1, if necessary.</p> <p>As currently proposed, FAC-011 should be titled "IROL Methodology" and references to SOLs determined by this methodology should be changed to IROLs. The Background Information on this comment form and the SAR clearly indicate that the intent of these changes is to address IROLs. The SAR and standard do not address SOLs. This direction is fully supported by the Functional Model which states: "With respect to transmission operations, the Reliability Coordinator and Transmission Operator have similar roles, but different scopes. The Transmission Operator is directly responsible for its own defined area. However, the Reliability Coordinator is also responsible, in concert with the other Reliability Coordinators, for the Interconnection as a whole. Thus, the Reliability Coordinator needs a "wide-area" view that reaches beyond its boundaries to enable it to operate within Interconnection Reliability Operating Limits." According to the Functional Model, the RC's only role in determining SOLs is to assist the TOP, as cited in our response to question 2: "Assists Transmission Operators in calculating and coordinating System Operating Limits."</p>

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Organization	Question 7 Comments:
	<p>The Functional Model clearly assigns the role of determining SOLs to the TOP - e.g. "7. Defines Total Transfer Capabilities and System Operating Limits based on facility information provided by the Transmission Owners and Generator Owners and assistance from Reliability Coordinator.", "13. Provides Total Transfer Capabilities and System Operating Limits to, and coordinates Available Transfer Capability with, Transmission Service Provider."</p> <p>For the current proposal for FAC-011-3, there will be no standard requiring the TOP to have an SOL Methodology. An IROL Methodology is not necessarily applicable for SOLs, since the RC has an "area-wide" view while the TOP has a narrower scope. We are concerned that RCs may not have sufficient understanding of individual systems and may not give adequate consideration to local limits to address these issue adequately in their Methodologies. If a TOP determines SOLs using a methodology designed for area-wide IROLs, they may not be operating reliably. R5 permits comments, but does not require the RC to incorporate comments. There is no standard requiring responsible functional entities (TOP, PC, TP) to consider and develop a methodology for determining SOLs in the Operations Horizon within their areas.</p> <p>Some have commented that the TOP can use more stringent standards to determine SOLs. We do not believe that this is clearly permitted by the standard or FAC-014 (i.e. FAC-014 R1, R2, R3, and R4 all use the same words - "consistent with". Surely the PC is not permitted to diverge from its own methodology, so the TOP would not be permitted to diverge from the RC methodology). Furthermore, there is no NERC standard requiring a TOP to document a more stringent methodology and no provision for adjacent TOPs to review the methodology, as there is in FAC-011 for RCs and FAC-010 for Planning Coordinators.</p> <p>For these reasons, BCTC believes that the standard needs to require the TOP to document its SOL methodology and make it available for review by others. The NERC Standard requiring this methodology, the contingencies to address, and the required performance may be different from the IROL methodology.</p>
NPCC	Economics should not drive the operation of a power system, bulk or otherwise. FAC-011-2 has a WECC Regional Differences attachment. Assuming the "differences" remain, they should be identified as variances.
CLECO	As an exercise, Cleco Power performed an initial investigation on its system of 1245 miles of Transmission level lines operating at 138KV and above. Of these lines 91 miles are either double or multiple circuits, of which 50 miles share the same structure and 41 miles lie within the same Cleco right-of-way. Since 1974 (excluding the affects of Hurricane Gustav) there has been 97 outages occurring within non-single circuit sections of a transmission path and only 14 of those affected more than one line concurrently. Of the 97 counted outages, 42 occurred on structures with more than one line attached. Of the 42 outage occurrences, only 10 events took more than one line out-of-service at the same time. The number and category of these events were: three from lightning, two from tornados, three from hurricanes, one from a substation CT failure and finally one from a static wire breakage. For right-of-ways containing more than one line, albeit on separate structures, there were 55

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Organization	Question 7 Comments:
	recorded outages during this time frame. Only 4 events involved in the outages resulted in outages of more than one line concurrently. The occurrence and number were: one from a tornado, two from a hurricane, and one from a substation PT failure. Excluding Tornadoes and Hurricanes, only 5 common mode contingencies occurred on lines attached to the same structure, and only one common mode contingency on more than one circuit within the same right-of-way. But most importantly, none of these events caused cascading outages or threatened the reliability of the Bulk Electric System. Although this exercise was not to guarantee that under any circumstances credible multiple contingencies don't exist; rather it was to give substantiation to the point that an in-depth analysis must be done on a case by case basis to examine the various appropriate system operating conditions in order to determine the validity of whether any credible multiple contingencies exist which could lead to an IROL.
Independent Electricity System Operator	
Southern Company Transmission	We point out that the Violation Severity Level for R3 may have 'double jeopardy' issue between the High and Severe Levels. Because the High VSL is triggered when the RC fails to have exactly 3 of 7 descriptions, it is not appropriate for the Severe VSL to trigger when "three or more" descriptions are not provided. The drafting team may consider the following revision: The Reliability Coordinator has a methodology for determining SOLs that is missing a description of [three] four or more of the following: R3.1 through R3.7. Industry has already voted down the previous attempt to include this language in the current FAC-011-2 standard. We did not support the previous efforts and do not support this current effort.
Omaha Public Power District	
CenterPoint Energy	
Entergy Services	
Exelon	Consideration should be given to the standardization of SOL methodologies on a Continent-wide basis where possible. This is the only vehicle that could accomplish that. Allowed uses of SPSs are already determined in TPL-001 and SPS standards. There should not be another entity performing this function (R3.5).What exactly is 'required'? Is there an expectation that a stability analysis be performed for multiple contingencies in operating time?
Santee Cooper	No. It appears that one RC is still attempting to force a standard on other RCs to make up for concerns in their RC area. We recommend that this issue be dealt with on a local level.
Duke Energy Corporation	
Ameren	No.
AEP	The proposed changes are overly prescriptive, unnecessary and redundant with the existing requirements.
Progress Energy Carolinas, Inc.	No additional comments.
City Of Tallahassee	The continued pursuit of a more restrictive requirement is unnecessary. IF a certain area wants to operate this way, they can make it a regional standard. There are enough other "holes" that we are working on that we should

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Organization	Question 7 Comments:
	not be rehashing the same defeated attempt to get everyone to be up to the same level as the "best player". The Reliability Standards should remain the MIMINUM Standards to ensure reliability of the BES. This does not improve the reliability to the BES. It does reduce the ability to do commerce which is one of FERC's "other" duties. Be reliable, but maximize ATC so everyone can use it. If the industry consensus is NO, why can't it remain that way? This "change" seems like a second attempt to get industry consensus for the original SAR.
PJM Interconnection	If the SAR drafting team were to keep the proposed explanatory Requirement 3.2.1, PJM would suggest deleting the first four words in the sentence.
ERCOT	
Midwest ISO Stakeholders Standards Collaborators	We understand that NERC and FERC would like to have the RC act as the highest authority in this IROL determination; however, TOPs that are on the border between RCs might be impacted more. To the extent that there are differences in IROL criteria between RC, there is no clear avenue for dispute resolution. Currently, FAC-014 does not address this issue and changes to the FAC-011 do not address this issue. The changes actually compound the issue because it potentially expands the number of IROLs.
NERC Standards Review Subcommittee	We understand that NERC and FERC would like to have the RC act as the highest authority in this IROL determination; however, TOPs that are on the border between RCs might be impacted more. To the extent that there are differences in IROL criteria between RC, there is no clear avenue for dispute resolution. Currently, FAC-014 does not address this issue and changing FAC-011 without addressing potential IROL criteria conflicts between RCs might be challenging. Currently, FAC-011-2 does not contain Risk Factors or Time Horizons. Both FAC-011-1 and FAC-011-2 have the same effective date. The effective date is also not in the NERC format of the 'First Day of the First Quarter following regulatory approval'. The MRO requests that the FAC-011-2 standard follow the NERC standard format. The standard FAC-014-1 should be added to the related standards table in the SAR.
Manitoba Hydro	
FRCC Staff	This SAR was proposed over a year ago and was soundly defeated by the industry. This SAR and proposed revision continues to be heavily supported by the members of the NPCC while FERC has documented (Order No. 705) their opposition to a revision of the standard. If a region expresses interest in operating beyond the requirements of existing NERC Reliability Standards they are well within their right to develop, seek approval and enforce a Regional Reliability Standard. What works well within a region's footprint does not necessitate the need for continent wide compliance.
Bonneville Power Administration	No
Brazos Electric Power Cooperative, Inc.	
American Transmission Company	We understand that NERC and FERC would like to have the RC act as the highest authority in this IROL determination; however, TOPs that are on the border between RCs might be impacted more. To the extent that

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Organization	Question 7 Comments:
	there are differences in IROL criteria between RC, there is no clear avenue for dispute resolution. Currently, FAC-014 does not address this issue and changing FAC-011 without addressing potential IROL criteria conflicts between RCs might be challenging. How does the SDT propose SOL/IROL limits be resolved when the differences are based solely on how RC's defines a common mode contingency?