Comment Report

Project Name:	2015-09 Establish and Communicate System Operating Limits | SOL and SOL Exceedance Definitions
Comment Period Start Date:	9/29/2017
Comment Period End Date:	10/30/2017
Associated Ballots:	

There were 36 sets of responses, including comments from approximately 92 different people from approximately 74 companies representing 10 of the Industry Segments as shown in the table on the following pages.

Questions

1. Given the above, and considering the rationale provided in the supporting document, do you support the SDT's proposal to revise the current SOL definition? (Clarification: this question is not asking of you agree with the proposed definition. That will be addressed in a separate question. This question is focused on the need to modify the SOL definition at all.) Please explain your response.

2. Given the above, and considering the rationale provided in the supporting document, do you support the SDT's proposal to create and implement a definition for SOL Exceedance? (Clarification: this question is not asking of you agree with the proposed definition. That will be addressed in a separate question. This question is focused on the need for having a definition of SOL Exceedance.) Please explain your response.

3. Considering the simplified approach to SOLs described here and the explanations provided in the definitions rationales, do you agree with the proposed SOL definition? Please explain your response and/or provide alternative language.

4. Considering the explanations provided in the definitions rationales, do you agree with the proposed SOL Exceedance definition? Please explain your response and/or provide alternative language.

5. Considering the explanations provided here and further explained in the definitions rationales, do you agree that the proposed SOL Exceedance definition should include this bullet item? Please explain your response and/or provide alternative language.

6. The SAR is being revised to authorize the SDT to review the existing body of Reliability Standards and NERC Glossary of terms, and where necessary, modify those standards and definitions to incorporate the new terms and/or definition(s) of SOL Exceedance and System Voltage Limit, as well as the revised definition of System Operating Limit. The SDT has identified the standards and terms they contend would benefit from this incorporation and has included them in separate documents with this posting for your review. Do you agree with the SDT's selections? If not, please explain your response.

7. If you have any other comments that you haven't already provided in response to the above questions, please provide them here.

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
Colorado Springs Utilities	Brandon Ware	1,3,5,6		Colorado Springs Utilities	Brandon Ware	CSU	1	WECC
					Shannon Fair	Colorado Springs Utilities	6	WECC
					Jeff Icke	Colorado Springs Utilities	5	WECC
					Hillary Dobson	Colorado Springs Utilities	3	WECC
ACES Power Marketing	Brian Van Gheem	6	NA - Not Applicable	ACES Standards Collaborators	Greg Froehling	Rayburn Country Electric Cooperative, Inc.	3	SPP RE
					Bob Solomon	Hoosier Energy Rural Electric Cooperative, Inc.	1	RF
					Shari Heino	Brazos Electric Power Cooperative, Inc.	1,5	Texas RE
					Ginger Mercier	Prairie Power, Inc.	1,3	SERC
					Lucia Beal	Southern Maryland Electric Cooperative	3	RF
					Tara Lightner	Sunflower Electric Power Corporation	1	SPP RE
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
New York Independent	Gregory Campoli	2		ISO/RTO Standards	Gregory Campoli	NYISO	2	NPCC
					Ben Li	IESO	2	NPCC

System Operator				Review Committee	Kathleen Goodman	ISONE	2	NPCC
					Mark Holman	PJM	2	NPCC
					Charles Yeung	SPP	2	SPP RE
					Nathan Bigbee	ERCOT	2	Texas RE
					Ali Miremadi	CAISO	2	WECC
Entergy	Julie Hall	6		Entergy/NERC Compliance	Oliver Burke	Entergy - Entergy Services, Inc.	1	SERC
					Jaclyn Massey	Entergy - Entergy Services, Inc.	5	SERC
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 ISO-NE and NGrid	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
					Bruce Metruck	New York Power Authority	6	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
					Laura Mcleod	NB Power	1	NPCC
					David Ramkalawan	Ontario Power Generation Inc.	5	NPCC
					Quintin Lee	Eversource Energy	1	NPCC
					Greg Campoli	NYISO	2	NPCC
					Silvia Mitchell	NextEra Energy - Florida Power and Light Co.	6	NPCC
					Paul Malozewski	Hydro One Networks, Inc.	3	NPCC
					Sylvain Clermont	Hydro Quebec	1	NPCC
					Helen Lainis	IESO	2	NPCC
					Chantal Mazza	Hydro Quebec	2	NPCC
					Michael Forte	Con Ed	1	NPCC
					Daniel Grinkevich	Con Ed - Consolidated Edison Co. of New York	1	NPCC
					Peter Yost	Con Ed - Consolidated Edison Co. of New York	3	NPCC
					Brian O'Boyle	Con Ed	5	NPCC
					Sean Bodkin	Dominion - Dominion Resources, Inc.	6	NPCC
Southwest Power Pool,	Shannon Mickens	2	SPP RE	SPP Standards	Shannon Mickens	Southwest Power Pool	2	SPP RE

Inc. (RTO)				Review Group		Inc.		
					Don Schmit	Nebraska Public Power District	5	SPP RE
					Louis Guidry	Cleco Corporation	1,3,5,6	SPP RE
					Tara Lightner	Sunflower Electric Power Corporation	1	SPP RE
					Mike Kidwell	Empire District	1,3,5	SPP RE
					Robert Hirchak	Cleco Corporation	6	SPP RE
					Kevin Giles	Westar Energy	1	SPP RE
					Nathan McNeil	Midwest Energy, Inc	NA - Not Applicable	SPP RE

1. Given the above, and considering the rationale provided in the supporting document, do you support the SDT’s proposal to revise the current SOL definition? (Clarification: this question is not asking of you agree with the proposed definition. That will be addressed in a separate question. This question is focused on the need to modify the SOL definition at all.) Please explain your response.

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

Answer	Yes
Document Name	

Comment

The proposed definition revision provides additional information on the determination of SOLs.

Likes 0	
Dislikes 0	

Response

Brandon Ware - Colorado Springs Utilities - 1,3,5,6, Group Name Colorado Springs Utilities

Answer	Yes
Document Name	

Comment

Colorado Springs Utilities supports the SDT's proposal to revise the current SOL definition.

Likes 0	
Dislikes 0	

Response

Terry Volkmann - Glencoe Light and Power Commission - 1

Answer	Yes
Document Name	

Comment

Glencoe 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	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
BPA agrees that greater clarification will be good for the industry. BPA is in support of modifying the SOL definition as long as the SOL Exceedance Definition is also created.	
Likes 0	
Dislikes 0	
Response	
Theresa Allard - Minnkota Power Cooperative Inc. - 1	
Answer	Yes
Document Name	
Comment	
See comments submitted by Glencoe Light and Power Commission.	
Likes 0	
Dislikes 0	
Response	
Michael Cruz-Montes - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
CenterPoint Energy Houston Electric, LLC (“CenterPoint Energy”) supports the SDT’s proposal to revise the current definition of SOL and generally supports the revised definition with the exception of the use of “stability limit” within the definition of SOL. We understand from comments made during an industry webinar that this use of “stability limits” is not the same definition of “Stability Limits” used in the NERC Glossary. We believe this to be confusing to the industry. If the SDT’s use of the term does not align with the NERC glossary term, then it needs to be clearly represented for the	

industry to know and understand the difference. Additionally, the NERC SOL whitepaper also uses a variation of “Stability limit”.	
Likes 0	
Dislikes 0	
Response	
Allie Gavin - International Transmission Company Holdings Corporation - 1 - MRO,SPP RE,RF	
Answer	Yes
Document Name	
Comment	
ITC agrees that the current System Operating Limit (SOL) definition is ambiguous. Clarifying the definition of a SOL will help to provide consistency and improve reliability.	
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	
Duke Energy agrees that revising the definition of an SOL would be beneficial for the industry. Some confusion still exists as to what actually constitutes an SOL.	
Likes 0	
Dislikes 0	
Response	
Scott Downey - Peak Reliability - 1	
Answer	Yes
Document Name	
Comment	
Peak supports the need for revising the defintion of SOL and creating a new definition for SOL Exceedance. Peak believes that the SOL definition	

needs to be revised and that a clear definition for SOL Exceedance needs to be created and implemented in the body of the NERC Reliability Standards. Doing so would result in improved clarity and consistency and would prevent entities from adopting interpretation of SOL Exceedance that do not provide the level of reliability intended by its use in the TOP and IRO standards. Peak also believes that the key events mentioned in question #1 do not provide a sufficient basis for addressing the clarity and consistency problems associated with the current defintiion of SOL and the absence of a defintion for SOL Exceedance as described in the supporting documnet "NERC Glossary Defintions: System Operating Limit and SOL Exceedance Rationale."

Likes 0	
Dislikes 0	

Response

Michael Brytowski - Great River Energy - 1,3,5,6 - MRO

Answer	Yes
Document Name	

Comment

Great River Energy supports the SDT's revised definition of SOL. The proposed definition improves clarity, and eliminates ambiguity that was present in previous definition.

Likes 0	
Dislikes 0	

Response

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no ISO-NE and NGrid

Answer	Yes
Document Name	

Comment

The revision is necessary to better capture industry practice and alignment with TOP/IRO standards.

Likes 0	
Dislikes 0	

Response

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

Answer	Yes
Document Name	

Comment	
ERCOT ISO signs on to the SRC comments.	
Likes 0	
Dislikes 0	
Response	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	Yes
Document Name	
Comment	
MidAmerican Energy Company (MEC) 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	
Wendy Center - U.S. Bureau of Reclamation - 1,5	
Answer	Yes
Document Name	
Comment	
Modifying the SOL definition is appropriate in conjunction with the addition of the definition of SOL Exceedance. Together, these definitions provide clarity and eliminate possibilities for confusion.	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 3,5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Hien Ho - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kayleigh Wilkerson - Lincoln Electric System - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

John Seelke - LS Power Transmission, LLC - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bob Solomon - Hoosier Energy Rural Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mike Smith - Manitoba Hydro - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Aubrey Short - FirstEnergy - FirstEnergy Corporation - 1,3,4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Quintin Lee - Eversource Energy - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy/NERC Compliance	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Brian Van Gheem - ACES Power Marketing - 6 - NA - Not Applicable, Group Name ACES Standards Collaborators	

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	
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	
Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - SPP RE, Group Name SPP Standards Review Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sarah Gasienica - NiSource - Northern Indiana Public Service Co. - 1,3,5,6	
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	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Lauren Price - American Transmission Company, LLC - 1 - MRO,RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

2. Given the above, and considering the rationale provided in the supporting document, do you support the SDT's proposal to create and implement a definition for SOL Exceedance? (Clarification: this question is not asking of you agree with the proposed definition. That will be addressed in a separate question. This question is focused on the need for having a definition of SOL Exceedance.) Please explain your response.

Lauren Price - American Transmission Company, LLC - 1 - MRO,RF

Answer	No
Document Name	

Comment

The justification for creating an SOL Exceedance definition, as described in the "NERC Glossary Definitions: System Operating Limit and SOL Exceedance Rationale" document, is speculative in nature. Specifically, the SDT expresses the concern that "[o]ne TOP might interpret SOL exceedances to not include the post-Contingency state when identifying SOL exceedance". However, the existing NERC definitions for OPA and RTA coupled with the requirements of the TOP-001-3 and TOP-002-4 standards logically combine to require an entity to evaluate the system for SOL exceedances for the post-Contingency condition. As such, there is insufficient reasoning to create a new definition for SOL Exceedance.

The SDT's concern appears to be with the wording of TOP-001-3 R14. Although ATC believes that there is no conflict or gap, a SAR could be written to improve the TOP-001-3 R14 requirement if the SDT still believes that there is an issue with the language.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

We do not believe it is necessary that NERC define SOL Exceedance. Operating outside an SOL in Real-time is an exceedance of the limits. An SOL that is predicted to be exceeded using RTA and OPS is a predicted exceedance, or a potential exceedance, but until it actually happens, it is not an exceedance. We believe it is important to keep a Real-time exceedance and an exceedance predicted by RTA or OPA separate from each other.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment
CenterPoint Energy does not support the creation and implementation of a definition for SOL Exceedance. We believe that the proposed term SOL Exceedance could potentially confuse the industry and take away from the clarity provided to the industry with the proposed revisions of the SOL definition. Furthermore, we believe that the proposed revisions to the definition of System Operating Limit (SOL) provide the industry with a clear and concise definition of the term; therefore, the industry understands that an exceedance to an SOL is when the applicable electrical values have gone beyond those established Facility Ratings limits, System Voltage Limits, and stability limits used in the operation of the BES.

Likes 0	
Dislikes 0	

Response

Wendy Center - U.S. Bureau of Reclamation - 1,5

Answer	Yes
Document Name	

Comment
The addition of the definition of SOL Exceedance is necessary in conjunction with the modification of the definition of SOL.

Likes 0	
Dislikes 0	

Response

Leonard Kula - Independent Electricity System Operator - 2

Answer	Yes
Document Name	

Comment
See our comments under Question 7.

Likes 0	
Dislikes 0	

Response

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3

Answer	Yes
Document Name	

Comment
MidAmerican Energy Company (MEC) 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.

Likes 0	
Dislikes 0	

Response

Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	

Comment
ERCOT ISO signs on to the SRC comments.

Likes 0	
Dislikes 0	

Response

Michael Brytowski - Great River Energy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	

Comment
Great River Energy supports the SDT's proposal to create a definition of SOL exceedance. However, the definition should not result in unintended consequences of imposing additional and undesirable administrative compliance burden to the detriment of system reliability. Additional administrative burden in an operational setting detracts from the reliable operation of the transmission system.

Likes 0	
Dislikes 0	

Response

Scott Downey - Peak Reliability - 1	
Answer	Yes
Document Name	

Comment
Peak supports the need for revising the defintion of SOL and creating a new defintiion for SOL Exceedance. Peak believes that the SOL defintion needs to be revised and that a clear definition for SOL Exceedance needs to be created and implemented in the body of the NERC Reliability Standards. Doing so would result in improved clarity and consistency and would prevent entities from adopting interpretations of SOL Exceedance that do not provide the level of reliability intended by its use in the TOP and IRO standards. Peak also believes that the key events mentioned in question #2 do not provide a sufficient basis for addressing the clarity and consistency problems associated with the current definition of SOL and the absence of a defintion for SOL Exceedance as described in the supporting document "NERC Glossary Defintiions: System Operating Limit and SOL Exceedance Rationale."

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
Duke Energy agrees that a definition of SOL Exceedance would be advantageous to the industry.

Likes 0	
Dislikes 0	

Response

Allie Gavin - International Transmission Company Holdings Corporation - 1 - MRO,SPP RE,RF	
Answer	Yes
Document Name	

Comment
ITC believes that defining SOL Exceedance will help to provide consistency and improve reliability.

Likes 0	
Dislikes 0	

Response

Theresa Allard - Minnkota Power Cooperative Inc. - 1	
Answer	Yes

Document Name	
Comment	
See comments submitted by Glencoe Light and Power Commission.	
Likes 0	
Dislikes 0	
Response	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
BPA believes the revision to the definition of SOL cannot occur unless SOL Exceedance is added to the Glossary.	
Likes 0	
Dislikes 0	
Response	
Terry Volkmann - Glencoe Light and Power Commission - 1	
Answer	Yes
Document Name	
Comment	
Glencoe 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.	
Likes 0	
Dislikes 0	
Response	
Brandon Ware - Colorado Springs Utilities - 1,3,5,6, Group Name Colorado Springs Utilities	
Answer	Yes
Document Name	

Comment	
Colorado Springs Utilities agrees that a definition for SOL Exceedance would provide needed clarity in the various affected Standards.	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
There has been ongoing confusion of whether SOLs are limits or are violations. The proposed definition provides clarity for the distinction.	
Likes 0	
Dislikes 0	
Response	
Laura Nelson - IDACORP - Idaho Power Company - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sarah Gasienica - NiSource - Northern Indiana Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - SPP RE, Group Name SPP Standards Review Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no ISO-NE and NGrid	
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	
Brian Van Gheem - ACES Power Marketing - 6 - NA - Not Applicable, Group Name ACES Standards Collaborators	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy/NERC Compliance	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Quintin Lee - Eversource Energy - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Aubrey Short - FirstEnergy - FirstEnergy Corporation - 1,3,4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mike Smith - Manitoba Hydro - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bob Solomon - Hoosier Energy Rural Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
John Seelke - LS Power Transmission, LLC - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kayleigh Wilkerson - Lincoln Electric System - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Hien Ho - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

3. Considering the simplified approach to SOLs described here and the explanations provided in the definitions rationales, do you agree with the proposed SOL definition? Please explain your response and/or provide alternative language.

Kayleigh Wilkerson - Lincoln Electric System - 1,3,5,6

Answer	No
Document Name	

Comment

While very close, it is felt that a tweak to the language can provide clarity in how RTM, RTAs, and OPAs are performed. Consider using: “Facility Ratings, System Voltage Limits, and stability limits **more restrictive than Facility Ratings (including margins if required)** used in the operation of the BES.” This ensures that RTAs and OPAs are not checked against Facility Ratings and then separately stability limits; it should only be the more limiting of the two. Other “studies” are still required to verify if stability limits are more restrictive, but are not needed as part of the RTAs and OPAs.

Likes 0	
Dislikes 0	

Response

Allie Gavin - International Transmission Company Holdings Corporation - 1 - MRO,SPP RE,RF

Answer	No
Document Name	

Comment

ITC agrees that the proposed SOL definition provides clarity and removes ambiguity. However, because the term "System Voltage Limit" is included in the definition of SOL, the definition of "System Voltage Limit" should be considered in this comment form. Assuming the definition of "System Voltage Limit" stands as currently proposed, ITC would approve of the proposed SOL definition.

Likes 0	
Dislikes 0	

Response

Leonard Kula - Independent Electricity System Operator - 2

Answer	No
Document Name	

Comment

See our comments under Question 7.

Likes 0	

Dislikes 0	

Response

Lauren Price - American Transmission Company, LLC - 1 - MRO,RF	
Answer	No
Document Name	

Comment
Comments: ATC has three comments with the proposed SOL definition: 1. The existing SOL definition contains important language regarding the "applicab[ility]" of the limit used. This clarity is missing from the proposed SOL definition revision. ATC believes the existing definition is better than the proposed definition from this perspective although entities could read “applicable” into the proposed definition as needed. 2. The term SOL is not used in proposed standard FAC-015-1 for the planning horizon. However, the concept does exist in the proposed standard. The proposed SOL definition only calls out the operating horizon and would be improved by recognizing the planning horizon as well. ATC recommends that the proposed SOL definition be edited to address this omission with wording like, “. . . used in the operation and planning of the BES”. 3. Similar to ATC’s response to Question #5 (below), stability limits can be a difficult to understand term to use in the SOL definition, especially since it is undefined. The SOL Exceedance definition tries to aid entities that establish and monitor SOLs by including the terms “stability performance criteria” to cover a wider range of system phenomenon than traditional stability limits (e.g., voltage stability, angular stability, system stability). For question #5, ATC recommends the use of “system performance criteria” to recognize that the underlying issue may not be a traditional stability problem but some other important system performance limit that is being exceeded. The underlying system issue is then represented by a proxy “stability limit” to keep the system within the bounds of acceptable performance. It would seem that this type of clarification would be more reasonably provided in the SOL definition and not the SOL Exceedance definition. Alternatively, the SDT could create a “Stability Limit” definition, which would then be referenced in the SOL definition by using the capitalized term. If a Stability Limit definition is created, the definition would then need to clearly indicate that both traditional stability issues and other system performance criteria issues (such as voltage ride through curves, angle difference from system reference angle, margin from voltage collapse point, system damping attenuation, etc.) can be represented with Stability Limits.

Likes 0	
Dislikes 0	

Response

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

Comment
The proposed definition provides needed clarity.

Likes 0	
Dislikes 0	

Response
Brandon Ware - Colorado Springs Utilities - 1,3,5,6, Group Name Colorado Springs Utilities
Answer	Yes
Document Name	
Comment
Colorado Springs Utilities finds the revised definition of SOL acceptable and workable.
Likes 0	
Dislikes 0	
Response
Terry Volkmann - Glencoe Light and Power Commission - 1
Answer	Yes
Document Name	
Comment
Glencoen agrees with the definition of SOL proposed by SDT.
Likes 0	
Dislikes 0	
Response
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC
Answer	Yes
Document Name	
Comment
BPA’s interpretation of a stability limit is often associated with a path.
Likes 0	
Dislikes 0	
Response

John Seelke - LS Power Transmission, LLC - 1	
Answer	Yes
Document Name	
Comment	
.	
Likes 0	
Dislikes 0	
Response	
Scott Downey - Peak Reliability - 1	
Answer	Yes
Document Name	
Comment	
Peak agrees with the SDT's proposed revision of the SOL defintion and with the arguments set forth in question #3 and with those set forth in the supporting document, "NERC Glossary Defintioins: System Operating Limit and SOL Exceedance Rationale."	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no ISO-NE and NGrid	
Answer	Yes
Document Name	
Comment	
We agree with the proposed definition, but in practice in order to remain within SOLs in operations is often the use of pre-determined transfer and monitoring of specific interfaces (either thermal, voltage stability, or transient stability). The concept is introduced in the rationale for component #5 and #6 of SOL exceedance, but more rationale regarding how a transfer interface is managed versus the simplified SOL definition would be helpful. Also, the use of “lower case” stability limits rather than the defined term causes some confusion. Why use the defined term for FR and SVL, but not stability limits? What is a stability limit for the purpose of the SOL definition?	
Likes 0	
Dislikes 0	
Response	

Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
ERCOT ISO signs on to the SRC comments.	
Likes 0	
Dislikes 0	
Response	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	Yes
Document Name	
Comment	
MidAmerican Energy Company (MEC) agrees with the definition of SOL proposed by SDT.	
Likes 0	
Dislikes 0	
Response	
Wendy Center - U.S. Bureau of Reclamation - 1,5	
Answer	Yes
Document Name	
Comment	
Reclamation supports categorizing all Facility Ratings, System Voltage Limits, and stability limits as SOLs.	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 3,5	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Hien Ho - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bob Solomon - Hoosier Energy Rural Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Theresa Allard - Minnkota Power Cooperative Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Cruz-Montes - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mike Smith - Manitoba Hydro - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Aubrey Short - FirstEnergy - FirstEnergy Corporation - 1,3,4	
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	
Quintin Lee - Eversource Energy - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Julie Hall - Entergy - 6, Group Name Entergy/NERC Compliance	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Brian Van Gheem - ACES Power Marketing - 6 - NA - Not Applicable, Group Name ACES Standards Collaborators	
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	
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 Brytowski - Great River Energy - 1,3,5,6 - MRO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - SPP RE, Group Name SPP Standards Review Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Sarah Gasienica - NiSource - Northern Indiana Public Service Co. - 1,3,5,6	
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	

4. Considering the explanations provided in the definitions rationales, do you agree with the proposed SOL Exceedance definition? Please explain your response and/or provide alternative language.

Lauren Price - American Transmission Company, LLC - 1 - MRO,RF	
Answer	No
Document Name	
Comment	

The proposed SOL Exceedance definition is unworkable as written.

The definition has a fundamental flaw as it is attempting to create a one size fits all definition for two very different situations. The two situations are: (1) real-time situations (Real-time Monitoring and Real-time Assessments), and (2) static situations (Operational Planning Analysis). As categories of these situations imply, there are different time components associated with an SOL Exceedance in each situation that are not adequately addressed by the proposed SOL Exceedance definition.

There are three primary concerns with the definition as written and applied towards real-time situations: (1) the pre-Contingency language, (2) the post-Contingency language, and (3) purpose of the definition.

1. The pre-Contingency portion of the definition is not workable because it assumes a static system and does not account for timeframes associated with operating to various SOLs in real-time situations. Specifically, the first two bullets require the use of a "Facility's Normal Rating" and "normal System Voltage Limits", which are not applicable to a system that has just suffered a contingency. As recognized in the post-Contingency language, once a contingency has occurred the actual flow on the system may exceed the Normal Rating and/or the actual voltage may be outside of normal System Voltage Limits. Prior to the contingency occurring, this was not an SOL Exceedance but now that the contingency has occurred it shall be deemed an SOL Exceedance solely because of the definition's pre-Contingency language. The definition does not recognize that the new pre-Contingency state has flows below the "Facility's highest Emergency Rating" but above the Normal Rating. This condition is not an SOL Exceedance because the system is operating as designed and is not experiencing unacceptable system performance. Flows will be able to be returned below the Normal Rating within the applicable timeframe. The TOP should not have to deem this an SOL Exceedance because the SOL has not been exceeded.
2. The post-Contingency portion of the definition is not workable because is assumes a static system whereas there are constantly changing real-time inputs of a possible post-Contingency state. Assessing the post-Contingency state represents only a snapshot in time. However, due to the way contingency analysis tools work, it can be several minutes before another snapshot of the real-time inputs calculates the newly expected post-Contingency state. The definition means an entity has an SOL Exceedance for even a single post-Contingency state result, which may not be valid due to the fluidity of the system, especially in a market. Given the way the STD is intending to use the definition (i.e. as a driver of action to mitigate the issue), the post-Contingency language would need to include reference to a **persistent** post-Contingency state indication.
3. The SDT explains that the purpose of this definition is to drive an action, which is not the purpose of a definition. As stated in the rationale document (p. 9), the SDT believes the proposed definition "accomplishes the intended reliability objective of triggering an appropriate action". NERC definitions should not drive requirements for entities. Rather, this function is accomplished by the requirements within the NERC Standards. A proposed definition should define what an SOL Exceedance is or is not. The proposed definition does not create this level of clarity because the SDT has developed a definition with a particular required action in mind (e.g., see above regarding the "pre-Contingent state" language). A proposal for edits to the definition is given below and these proposed edits will achieve the intended outcome the SDT desires because the edits recognize the time-based nature of limits, which the SDT recognizes in its rationale document (cf. p. 11).

ATC recommends that the SOL Exceedance definition not be created. However, if the definition will be created, ATC recommends that the two separate definitions be created to recognize the difference between real-time and next contingency situations regarding SOL exceedances. If two definitions will not be created, at a minimum, edits must be made to the "pre-Contingency state" language so that the definition does not reference "normal" ratings or voltage limits. This specific language should be changed to refer to "applicable" ratings and "applicable" voltage limits because of the explanation above regarding the definition applying to real-time situations immediately following a contingency (i.e. what was not an SOL exceedance suddenly becomes an SOL exceedance, which is not logical from a definition standpoint).

Proposed definitions for SOL Exceedance in both RTA and OPA would bring clarity to the industry. The proposed definitions are as follows:

SOL Exceedance - Real-time:

An Operating condition or analysis result characterized by any of the following, as determined in Real-time monitoring or Real-time Assessments (RTA):

The pre-Contingency state indicates any of the following:

- Actual flow through a Facility is above the Facility's applicable Rating for a time period longer than deemed acceptable.
- Actual bus voltage is outages applicable System Voltage Limits" for a time period longer than deemed acceptable.
- A stability limit established to prevent instability without a Contingency is exceeded for a time period longer than deemed acceptable.
- A stability limit established to prevent the Contingency from resulting in instability is exceeded for a time period longer than deemed acceptable.

The calculated post-Contingency state indication persists for any of the following:

- Flow through a Facility is above the Facility's highest Emergency Rating, or above a Facility Rating for which there is not sufficient time to reduce the flow to established acceptable levels should the Contingency occur
- Bus voltage is outside the highest or lowest emergency System Voltage Limit, or outside a System Voltage Limit for which there is not sufficient time to bring the bus voltage to established acceptable levels should the Contingency occur
- Defined stability performance criteria are not met

SOL Exceedance - Next Contingency

An Operating condition or analysis result characterized by any of the following, as determined in Operational Planning Analysis (OPA):

The pre-Contingency state indicates any of the following:

- Flow through a Facility is above the Facility's normal Rating
- Bus voltage is outages normal System Voltage Limits
- A stability limit established to prevent instability without a Contingency is exceeded
- A stability limit established to prevent the Contingency from resulting in instability is exceeded

The calculated post-Contingency state indication persists for any of the following:

- Flow through a Facility is above the Facility's highest Emergency Rating, or above a Facility Rating for which there is not sufficient time to reduce the flow to established acceptable levels should the Contingency occur
- Bus voltage is outside the highest or lowest emergency System Voltage Limit, or outside a System Voltage Limit for which there is not sufficient time to bring the bus voltage to established acceptable levels should the Contingency occur
- Defined stability performance criteria are not met"

These changes will allow the definition to work in the pre-Contingency state as envisioned by the SDT while also clarifying that an SOL exceedance after a contingency occurs in real time only exists if the actual flow or the actual voltage (i.e. the new pre-Contingency state) is outside of the applicable limit for an applicable period of time. In addition, these changes provide the needed clarity for post-Contingency situations.

Likes 0	
Dislikes 0	

Response

Leonard Kula - Independent Electricity System Operator - 2

Answer	No
Document Name	
Comment	
See our comments under Question 7.	
Likes 0	
Dislikes 0	
Response	
Sarah Gasienica - NiSource - Northern Indiana Public Service Co. - 1,3,5,6	
Answer	No
Document Name	
Comment	
NIPSCO is not in agreement that an SOL Exceedance has occurred if the flow is over a rating for an “Acceptable duration” being the time allowed for the next emergency rating. We do agree that an exceedance would occur if outside that “acceptable duration”. In the explanation the Standards Develop Team states that “any PERSISTENT exceedance of a Normal Rating should be regarded as an SOL exceedance, even if the exceedance occurs for an acceptable duration.” The word “persistent” and the idea that there is NOT an “acceptable duration” for the flow to go over the Normal Rating seem to contradict. Also the SOL Performance Summary on page 11 of the Rationale document states, “Pre-Contingency flow in this range (between normal and first emergency) for longer than 4 hours is not acceptable.” How does this fit the explanation? Is 4 hours the acceptable duration? And if it is not acceptable to go beyond the 4 hours then we assume less than 4 hours is acceptable. If so, how can an SOL exceedance be acceptable since by the SDT definition for a flow above normal there is an SOL exceedance? We believe the MISO definition for Pre-Contingency as it relates to Facility Ratings is better. The MISO definition is as follows: SOL Exceedance Based on Real-Time Flows A. Actual steady state flow on a BES Facility is greater than the Facility’s highest Emergency Rating for any time period. B. 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. C. Actual steady state voltage on a BES Facility is greater than the emergency high voltage limit for time frame identified by the TOP. D. Actual steady state voltage on a BES Facility is less than the defined emergency low voltage limit for time frame identified by the TOP. E. Any established stability Limit (non-IROL) is exceeded for longer than the 30 minutes or defined by operating guides.	
Likes 0	
Dislikes 0	
Response	

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	No
Document Name	

Comment

MidAmerican Energy Company (MEC) re-iterates our disagreement with the proposed definition of SOL exceedance. We note the SDT's reluctance to incorporate our original comments and suggested changes submitted during the August 2016 commenting period.

- The SDT failed to assess and recognize that the proposed SOL exceedance definition will cause unintended consequences on large spectrum of the Industry's participants.
- The first issue with the SDT's proposed definition of the SOL exceedance is that it would expose TOPs and RCs to unnecessary compliance risk. Significant resources for each TOP's/RC's organization would be required to meet the higher compliance administrative burden.
- The second issue is the definition is driven by SDT's belief that the definition would "trigger implementation of Operating Plan". However, MEC believes the definition could 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. MEC believes that a potential unintended outcome to avoid the administrative burden would be to operate in an unnecessarily conservative operation mode**.** The SDT has downplayed existing NERC standards that already currently require system operator training, tools, and processes to trigger the implementation of Operating Plans, including SCADA operating alarms, RTCA results, principles of reliable operations and high quality operator's training.

The role of NERC adopted definition of SOL exceedance definition, 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 this infrastructure. In other words the *SOL exceedance definition should be focused on defining what is considered to be unacceptable operation rather than what should be good operating practice based recommendable operation*.

Therefore, MEC recommends the SDT defer voting/ballots on this item until such time that the following tasks are completed:

- Perform comparative analysis of existing SOL definitions nation-wide, in order to get an informed insight as to where majority of industry's participants stand on this definition.
- Perform analysis of additional staffing resources and tools that would be needed to implement proposed definition.
- Outline and assess compliance driven administrative burden that the proposed definition would impose on numerous entities in terms of providing an evidence of compliance that they initiated an Operating Plan for each single event of SOL exceedance.
- Evaluate a risk of overwhelming and distracting real-time operations people with a burden of significantly increased communication requirements associated numerous instances of marginally relevant localized SOL exceedances.
- Assess the potential impact of outages with the implementation of the proposed SOL definition. The combination of the proposed SOL definition and operational outages could significantly constrain business in the industry associated with the industry's inability to approve and perform numerous scheduled outages (with many of them mandated by other NERC standards). The conservative definition of SOL exceedance would simply make it impossible for many of these outages to proceed without causing SOL exceedances.

- Assess the impact that the proposed definition would have on efficiency of market operations and associated cost.

MEC *recommends the SDT reconsider adoption of the current SOL exceedance in effect in the MISO Reliability footprint*. This is based on the following advantages of the MISO definition when compared with the SDT's proposed definition. The MISO definition:

- *Is more realistic in recognizing reality of existing transmission infrastructure and human resources allocated to operate such an infrastructure*
- *Would provide for significantly less administrative burden* on numerous Industry's entities related to providing evidences of compliance.
- Would provide *comparably reliable operation* of power systems.
- Is *based on physical limitations of various components of transmission facilities* as opposed to being based on "intention to trigger implementation of Operating Plan".
- Would *prevent potential increased* market operations costs.
- Would provide *more clarity and avoid ambiguity and interpretation issues*.
- Is more efficient for small entities that don't have advanced tools and other resources, including, but not limited to staffing and support personnel.

The current MISO Reliability footprint wide SOL Exceedance occurs if system operating state indicates any of the following:

- *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.*
- *Any established stability limit (non-IROL) is exceeded for longer than the 30 minutes or defined by Operating Plan.*
- *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.*
- *Projected post-Contingent voltage on a BES Facility is less than the Emergency low voltage limit for longer than 30 minutes with NO agreed upon Post Contingency Action Plan that would mitigate the condition if the Contingency were to occur.*
- *Rationale for MEC Comments and Recommendation*
- The SDT limited its vision of this subject to the Project 2014 - TPL White paper. The White paper was product of a small subset of subject matter experts. The original version of the NERC White Paper (from May 2014) was more objective and referenced the use of post-contingent action plans to address projected post-contingent issues. Subsequent versions of the NERC White Paper (revision of January 2015) weren't presented to industry, weren't approved by the Industry. More industry participant input responsible for implementing the real-time SOL exceedance definition is still needed.
- The SDT proposed definition of the 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

"SOL exceedance" may easily cause an incorrect expectation that TOP/RC control action response to these two types of exceedances should be similar. The actual, pre-contingency SOL Exceedance is a real-time condition exceeding the equipment's rated capabilities, while the calculated, post-contingency risk of SOL Exceedance requires another event to happen in order to become real and actual exceedance issue.

- Both pre-contingent and post-contingent types of exceedances require and should trigger implementation of a control action from the Operating Plan. However, implementation should be treated *differently in terms of urgency and severity of mitigating control actions*, as they have different repercussions on system reliability.

MEC comments on specific "components" from the SDT's document:

Component #3 – *The pre* *it's Normal Rating* *Contingency that indicates: … Actual flow th*

- Persistent should be removed as ambiguous and not auditable. The SDT determined that any persistent exceedance of a Normal Rating should be regarded as an SOL exceedance, even if the exceedance occurs for an acceptable duration. MEC disagrees with the SDT's insistence on using Normal Rating and recommend the use of Emergency Rating. The technical rationale for our recommendation is based on the TOP rating methodology which considers all limiting factors for transmission facilities and assesses *no reliability repercussions as long as the flow on facility is returned below normal rating during time that was assigned for the emergency rating*. Transmission operators have used emergency ratings for many years and that fact should be correspondingly recognized in the SOL exceedance definition.

- The SDT's rationale to use Normal Rating in order to "trigger implementation of Operating Plan" is confusing. TOPs understand the limitations associated with the use of Emergency Rating and their obligation to return the flow below Normal Rating within specified time-frame. Hard-coded SCADA based operational alarms will trigger implementation of Operating Plan. Therefore, it is unnecessary to adopt a conservative definition of SOL exeedance in order to "remind" TOPs and RCs of their well understood obligation to return flow under Normal Rating in specified time-frame.

- Although the SDT stated that the their goal is to improve clarity and eliminate ambiguity they increase ambiguity and open another issue of interpretation by introducing the term **"**persistent exceedance of a Normal Rating". The time of exceedance has to be clearly specified in this component. Otherwise, how will entities, including Auditors, measure "persistency" of exceedance?

- The proposed, conservative definition could cause undesirable consequences in terms of administrative compliance burden and an unnecessarily increase the cost of market operations while providing marginal benefit to system reliability. TOPs/RCs are already under NERC obligation to protect facilities on a contingency basis, which will consequently protect that facility against real-time flow exceedances.

MEC recommends the following definition superior alternative:

- ***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.***

Component #4 – *The pre* *Operating Actual bus voltage is outside normal System Voltage Limits*

- MEC disagrees with the SDT's insistence on using Normal System Voltage Limits and recommend using Emergency Voltage Limits. Our arguments regarding the Component #4 are similar to our comments concerning the Component #3.

- The technical rationale for our recommendation is based on the fact that TOPs/RCs do operate their systems within normal voltage limits during vast majority of the time. However, there are rare instances when sudden events and changes to operating conditions, or periods during switching long transmission lines, require use of emergency voltage limits. That is why *SOL exceedance definition should be focused on what is*

considered to be unacceptable operation rather than what should be recommended operation. Again, the proposed, conservative definition would cause undesirable consequences in terms of administrative compliance burden.

MEC recommends the following definition:

- ***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.***

Component #6 – *The pre* *mitigating to prevent the … A stability li*

Contingency from resulting in instability is exceeded

- The SDT differentiated between stability limits occurring without contingency and stability limits that are contingency based and conditioned. The SDT rational doesn't justify the existence of two components related to stability limits.
- The physical nature of the stability limits is best addressed within individual Operating Plans. Therefore, there is no need to separate the different natures of stability problems within the definition of a SOL exceedance. This is an unnecessary complication and could be resolved by merging two subcomponents into the one.
- 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%).

We recommend the following definition:

- ***Any established stability limit (non-IROL) is exceeded for longer than the 30 minutes or defined by Operating Plan.***

Component #7 – *The calculated post* *Contin*
above a Facility Rating for which there is not sufficient time to reduce the flow to established acceptable levels should the Contingency occur

- The SDT provided clarification of their position by pointing out the (Project 2014 White Paper) two portion highlighted in yellow, according to the SDT's explanation) " is considered an SOL Exceedance because this designation accomplishes the desired outcome by triggering mitigating action through the implementation of an Operating Plan".
- Please note the original version of the NERC White Paper (from May 2014) stated that "Post-contingency flow in this range is not acceptable unless Operating Plan address reliability impact so that it has localized impact". Subsequent versions of the NERC White Paper (revision of January 2015) introduced a statement that "Post-contingency flow in this range is not acceptable". This revision wasn't presented to the industry, and never approved by the Industry.
- 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 "SOL exceedance" may easily cause an incorrect expectation that TOP/RC control action response to these two types of exceedances should be similar.
- Both 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 portion of the definition that states, *"…or above a Facility Rating for which there is not sufficient time to reduce the flow to established acceptable levels should the Contingency occur"* is intended to address the operating state highlighted in light blue. This portion of the definition will cause industry implementation and compliance issues. It introduces ambiguity and confusion. Because TOPs/RCs would be faced with hard and sometimes impossible task to determine what is actually "sufficient time" for any specific set of operational circumstances. This time may depend on unit ramp rates along with efficiency and speed of congestion management procedures (such as LMP binding). This could impose significant market operations costs, while providing marginal reliability benefits.

MEC recommends the following definition:

- *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.*

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's 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.

- MEC recommends a Post-contingency action plan developed by the 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, MEC would not consider a 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.

- MEC recognizes that there may be situations 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 fashion 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". The MEC alternative definition is based on the concept of "post-contingency action plan". MEC recognizes it might be argued that the TOP has to establish a new Short Emergency rating in contrast to agreeing with its RC on post-contingency action plan. Issuing a new Short Term Emergency rating should be considered as a legitimate alternative. However, there are practical obstacles to issuing higher emergency ratings (or "Load Shed Rating"). The Industry must obtain manufacturer 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 transformers components etc). The majority of manufacturers aren't willing to provide such data. Therefore, for practical reasons, short-term ratings based on manufacturers' data are difficult to corroborate. Consequently, each TOP and RC would 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	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - SPP RE, Group Name SPP Standards Review Group	
Answer	No
Document Name	
Comment	
The SPP Standards Review Group recommends that the drafting team removes the term “Operational Planning Analysis (OPA)” from the SOL Exceedance definition. From our perspective, we feel that the SOL Exceedance Definition should be applicable to only an actual SOL Exceedance instead of focusing on a potential exceedance.	
Likes 0	
Dislikes 0	
Response	
Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee	
Answer	No
Document Name	
Comment	
IRC is concerned that the use of the term “acceptable levels” in the first and second bullets under the description of the “calculated post-Contingency state” is unclear as to which entity—the responsible entity or the compliance authority—determines what level is “acceptable.” Although the IRC believes the responsible entity should be the entity that determines the appropriate level, IRC has no consensus on appropriate substitute language at this time.	
Likes 0	
Dislikes 0	
Response	
Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	No
Document Name	
Comment	
ERCOT ISO signs on to the SRC comments.	
Likes 0	

Dislikes 0	

Response

Michael Brytowski - Great River Energy - 1,3,5,6 - MRO	
Answer	No
Document Name	

Comment

Great River Energy does not agree with the proposed definition of SOL exceedance for the following reasons.

- The SDT's proposed definition of the SOL exceedance would expose a large number of operating entities, both TOPs and RCs, to increased compliance risk through additional administrative burden with no foreseen benefit to reliability.
- The definition should allow for a maximum time the limit can be violated, similar to the approach currently in place with Interconnection Reliability Operating Limits. This would allow time for the execution of responses either through automated mechanisms or System Operator actions to mitigate the system condition. NERC currently defines Emergency Rating as a limit, which can be exceeded for a finite period, as specified for a facility by its equipment owner. Current practices leverage the use of Emergency Ratings in many operation and planning activities, and shifting to a more stringent definition could create a significant compliance burden.

The proposed definition fails to consider the validity of calculated post-contingent values. Applicable entities will soon be held accountable with the quality of developing Real-time Assessments, as required in NERC Reliability Standards IRO-018-1(i) and TOP-010-1(i). These assessments help identify real actions that must be implemented in order to alleviate potential system problems. Often these problems are identified through N-1 contingencies, although could be identified through multiple level "tower" contingencies accounting for Facilities that are located on the same transmission infrastructure. Violating limits associated with these limits, while concerning, may not pose an immediate threat to system reliability. The definition should narrow the exceedance identification process to only real, pre-contingent values.

- We suggest and recommend *that SDT consider adoption of the SOL exceedance that is currently in effect in MISO Reliability footprint*, based on the following advantages of the MISO definition when compared with the SDT's proposed definition:
- It is much more realistic in recognizing existing transmission infrastructure and human resources allocated to operate such an infrastructure
- It would provide for significantly less administrative compliance burden on numerous Industry's entities as related to providing evidence to meet the current definition.
- It would provide comparable reliability in the operation of the transmission system with a substantial benefit of less administrative burden.
- It is based on the physical limitations of various components of transmission facilities as opposed to being based on "intention to trigger implementation of Operating Plan".
- It provides more clarity and avoids ambiguity and interpretation issues.
- It is much more acceptable to vast majority of Industry participants, especially smaller TOPs

As a reference to the SDT, a MISO Reliability footprint wide SOL Exceedance occurs if system operating state indicates any of the following seven conditions:

- 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 less than the defined emergency low voltage limit for time frame identified by the TOP.
- Actual steady state voltage on a BES Facility is greater than the emergency high voltage limit for time frame identified by the TOP.
- Any established stability limit (non-IROL) is exceeded for longer than the 30 minutes or defined by Operating Plan.
- 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.
- Projected post-Contingent voltage on a BES Facility is less than the Emergency low voltage limit for longer than 30 minutes with NO agreed upon Post Contingency Action Plan that would mitigate the condition if the Contingency were to occur.
- Great River Energy would like to emphasize the difference between the above definition and the SDT's proposed definition as it relates to the concept of a 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 a longer-term rating for a specified amount of time. An SOL exceedance should not exist if a post contingent action plan has been identified and is in place to address the contingency were it to occur. It should only exist if no plan has been formulated within the specified time frame which for MISO members has been identified as 30 minutes.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

We do not believe it is necessary that NERC define SOL Exceedance. However, if there is going to be a definition we believe a simple definition for Real-time operations is best.

We suggest the following definition:

SOL Exceedance - An operating condition, as determined in Real -time Monitoring, wher

An exceedance can only occur if it happens in Real-time and therefore the SOL Exceedance definition should not incorporate the concept of predicted exceedances. Predicted exceedances, such as those identified through OPAs and RTAs, may or may not occur as they are just that, predicted. Predicted exceedances should not be defined and subject to the stringent set of limitations and requirements that SOL Exceedances should be. Furthermore, how predicted exceedances are identified, assessed, operationally planned for and mitigated should be the responsibility of the Reliability

Coordinator. Therefore, any such definition for predicted exceedances should remain in the respective RC's SOL methodology.

Likes 0	
Dislikes 0	

Response

Brian Van Gheem - ACES Power Marketing - 6 - NA - Not Applicable, Group Name ACES Standards Collaborators

Answer	No
Document Name	

Comment

1. We believe the definition should allow for a maximum time the limit can be violated, similar to the approach currently in place with Interconnection Reliability Operating Limits. This would allow time for the execution of mitigative responses either through automated mechanisms or System Operator actions. NERC currently defines Emergency Rating as a limit, which can be exceeded for a finite period, as specified for a facility by its equipment owner. Current practices leverage the use of Emergency Ratings in many operation and planning activities, and shifting to a more stringent definition could create a significant compliance burden.
2. We believe the proposed definition fails to consider the validity of calculated post-contingent values. Applicable entities will soon be held accountable with the quality of developing Real-time Assessments, as required in NERC Reliability Standards IRO-018-1(i) and TOP-010-1(i). These assessments help identify real actions that must be implemented in order to alleviate potential system problems. Often these problems are identified through N-1 contingencies, although they could be identified through multiple level "tower" contingencies accounting for Facilities that are located on the same transmission infrastructure. Violating limits associated with these limits, while concerning, may not pose an immediate threat to system reliability. The definition should narrow the exceedance identification process to only real, pre-contingent values.

Likes 0	
Dislikes 0	

Response

Julie Hall - Entergy - 6, Group Name Entergy/NERC Compliance

Answer	No
Document Name	

Comment

Entergy strongly disagrees with the definition as written.

The "pre-Contingency" state does not include a statement regarding time. If an entity using time dependent emergency ratings it should only be an exceedance if the actual flow through a facility is above the Facility's normal rating for a period of time greater than the timeframe of the emergency rating. The definition of the post-contingency state does take into account emergency ratings but they are essentially useless if by definition the instance after the contingency occurs and now you move into the next pre-contingency state you will immediately have an SOL exceedance.

In addition, the post-contingency state mentions the term "sufficient time" but doesn't describe what "sufficient time" time is. This leaves the definition ambiguous.

Entergy believes you should adopt the MISO definition of SOL exceedance as follow.

- ***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.***
- ***Any established stability limit (non-IROL) is exceeded for longer than the 30 minutes or defined by Operating Plan.***
- ***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.***
- ***Projected post-Contingent voltage on a BES Facility is less than the Emergency low voltage limit for longer than 30 minutes with NO agreed upon Post Contingency Action Plan that would mitigate the condition if the Contingency were to occur.***

Likes 0	
Dislikes 0	

Response

Daniel Grinkevich - Con Ed - Consolidated Edison Co. of New York - 1,3,5,6

Answer	No
Document Name	

Comment

Typically there are additional Thermal ratings above the "normal" limit that have a time frame associated with them. For example an emergency limit may be a 15 minute rating, i.e. the flow can be at the emergency rating for 15 minutes. Therefore, by design, being above the normal rating is not going to result in damage to the BES elements. Therefore the 1st bullet in the SOL Exceedance definition should be revised to
"Actual flow through a Facility is above the Facility's Rating and the associated allowable time frame is exceeded."

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

Duke Energy requests further clarification on the rationale behind the differences in criteria between pre-Contingency, and post-Contingency. As proposed, 'pre-Contingency' criteria for exceedances are above 'normal' ratings/limits, whereas 'post-Contingency' criteria for exceedances being 'above the highest/lowest' rating/limit. We feel that the rating/limit should be the same for both, and propose that the pre-Contingency criteria should also be for 'above the highest/lowest' rating/limit.

Some ambiguity exists with the use of "Normal Rating". It is possible that an entity could interpret the use of "Normal Rating" to include all ratings. We recommend the drafting team consider adding language that explains that a "Normal Rating" is defined by the entity's SOL Methodology.

- *"Actual flow through a Facility is above the Facility's Normal Rating (as defined by entity's SOL Methodolgy)"*

Also, there appears to be some inconsistency between the text of the SOL Exceedance definition, and the SOL Performance Summary table found on page 11 of the SOL/SOL Exceedance Rationales document. The table implies that an SOL Exceedance can occur within the 1-hr rating range. Was this the drafting team's intent? It is acknowledged that action is needed if the Exceedance occurs within the 1-hr ratings range, but does the drafting team contend that an SOL Exceedance can occur even if you are still in that 1-hr rating.

Lastly, The definition does not address temporary conditions. What happens if you have a fault and it drags your bus voltage down long enough to pick up and alarm, and then restores. Would that be a exceedance according to the proposed definition? We recommend that the drafting team include language that outlines how long an SOL may be exceeded in the RTA before a Mitigation Plan should be developed. We suggest that the drafting team insert language recommending that an SOL Exceedance has not occurred until the SOL has been exceeded for a period of 30 minutes or longer.

Likes 0	
Dislikes 0	

Response

Allie Gavin - International Transmission Company Holdings Corporation - 1 - MRO,SPP RE,RF

Answer	No
Document Name	

Comment

The proposed definition of SOL Exceedance does not consider the concept of timeframes on Facility Ratings. Specifically, the SOL Performance Summary on page 5 of the System Operating Limit Definition and Exceedance Clarification whitepaper from Project 2014-03 indicates that Pre-Contingency flow between a Normal Rating (24 hour rating) and a higher Emergency Rating with an associated timeframe (4 hour in the specific example) is not an SOL exceedance until flow exceeds both the Normal Rating (24 hour rating) and the time limit associated with the higher limit (again, 4 hours in this specific example). The proposed definition of SOL Exceedance would consider Pre-Contingency flow above the Normal Rating (24 hour rating) to be an SOL Exceedance irrespective of any time based higher rating.

For the Pre-Contingency state, actual flow through a Facility above its Normal Rating should not be an SOL Exceedance unless the actual flow through the Facility stayed above the Normal Rating for a duration longer than the timeframe associated with the next rating. NERC standard TOP-001-3 R14 states that "Each Transmission Operator shall initiate its Operating Plan to mitigate a SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment". Per the definition of SOL Exceedance TOP's will be required to mitigate flows going above normal rating all of the time even if the facility has a valid higher rating that allows flows to be above Normal Rating for a defined period of time. While the system operators will act to reduce flows to below the normal rating an SOL Exceedance should not be defined to occur until the defined period of time for the next higher rating has been exceeded. Defining an SOL Exceedance to occur whenever the normal rating is exceeded regardless of timeframe creates a compliance burden on real time operations staff that will reduce reliability due to the distractions associated with creating compliance documentation.

For the post-Contingency state, it should be made clear that monitoring Normal Ratings for contingency analysis is not required. Instead, as depicted in the SOL Performance Summary on page 5 of the System Operating Limit Definition and Exceedance Clarification whitepaper and on page 11 of the NERC Glossary Definitions: System Operating Limit and SOL Exceedance Rationale document, having a long term Emergency Rating of sufficient duration to allow for a reduction in flow to below the Normal Rating would allow for monitoring to Emergency Ratings during contingency analysis. Requiring TOP's to monitor contingency analysis results for post contingent conditions that exceed Normal Ratings will create undue burden on system operators as well as on the contingency analysis programs. In addition, setting the threshold lower than what is currently used may reduce the usage of the transmission system. Due to the significant increase in the volume of reported contingency violations which will need to be sorted through and contemplated. In fact, some contingency analysis tools have a finite number of contingency violations that can be reported and depending on the relative severity of contingent violations, will likely result in not reporting valid post-contingent violations of emergency limits which have a much more significant impact on reliability.

Often times load shed is used as a mitigation plan when flow on a facility is above the highest Emergency Rating however implementing pre-contingent load shed to mitigate an SOL Exceedance may not be prudent all of the time since load shed may occur when the contingency happens. In addition, the impact of SOL Exceedance is local in nature. A TOP should have the ability to weigh the risks/benefits associated with implementing load shed vs risking a localized impact for a postulated post-contingent condition without having to factor in SOL Exceedance compliance considerations. The transmission system is much too dynamic to be overly prescriptive. Specifically, with the proposed definition of SOL Exceedance, standard TOP-001-3 R14/R15 may not explicitly allow for TOP's to not implement pre-contingent load shed if post contingent operation is above the highest Emergency Rating. The Project 2014-03 Whitepaper clearly specified that pre contingency load shed may not be necessary or appropriate. Absent any modifications to TOP-001-3 the proposed SOL Exceedance definition may require pre-contingent load shed actions. If the definition is used as currently proposed then TOP-001-3 should also be revised to add clarification that a post contingent SOL Exceedance is acceptable as long TOP has a viable Operating Plan.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Manitoba Hydro agrees with the SDT that a definition for SOL Exceedance is needed to support the updated standards. We agree with all components of the definition with the exception of components #3 and #4 – exceeding normal facility ratings or normal voltage limits. Should exceeding the normal facility rating or normal voltage be the trigger for all the reporting requirements included in these updated standards. Most TOPs can exceed their normal facility ratings and normal voltage limits without any adverse effects on the system. In fact, these TOPs have emergency facility ratings and emergency voltage limits to give operators the time to take corrective actions in response to an event that would cause these normal ratings and limits to be exceeded. It seems unnecessarily burdensome to ask TOPs and RCs to report and document these events when they pose no risk to reliability. Conversely, exceeding emergency ratings and limits is definitely impactful to the reliability of the BES. It is appropriate to expect a higher threshold of reporting and documentation for these events.

With the proposed definition, SDT putting a huge compliance burden on to TOPs and RCs for no apparent reliability impact. New definition require TOP to notify their RC, every time the real time flow or the voltage goes outside the normal range and make a log entry for compliance purposes.

Manitoba Hydro believes that the SOL Exceedance definition should reflect the more sever conditions than the normal rating. For an example, due to absence of NERC definition for SOL Exceedance, MISO members developed definition for the SOL Exceedance. Like the proposed NERC definition, MISO SOL Exceedance definition also covers the real-time condition and the projected post contingency condition. According to MISO definition, SOL exceedance occurs whenever the real-time flow goes above the highest Emergency rating or the real-time voltage goes outside the emergency voltage

limits. Manitoba Hydro support MISO's approach of managing SOL exceedance.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

CenterPoint Energy does not agree with the proposed definition of SOL Exceedance and believes that a definition is not necessary. If you take into consideration the FERC-referenced, NERC SOL Whitepaper coupled with the work the SDT has done to provide the industry with a clear and concise proposed definition to the System Operating Limit (SOL) term, a formalized definition to SOL Exceedance is not warranted. Furthermore, we believe that the proposed definition to SOL Exceedance is problematic and confusing with potential operational and compliance implications. We are concerned that the SDT definition and application of the term "stability limits" differs from the NERC approved glossary definition of "Stability Limits". This term, "Stability limit" is also used in the NERC SOL Whitepaper. CenterPoint energy urges the SDT to have further discussions and considerations towards the use of "stability limits" for proper alignment with the NERC defined term as well as how the term is used in the NERC SOL Whitepaper for clear representation to the industry.

Likes 0	
Dislikes 0	

Response

Theresa Allard - Minnkota Power Cooperative Inc. - 1

Answer	No
Document Name	

Comment

See comments submitted by Glencoe Light and Power Commission.

Likes 0	
Dislikes 0	

Response

Bob Solomon - Hoosier Energy Rural Electric Cooperative, Inc. - 1

Answer	No

Document Name	
Comment	

Hoosier Energy strongly disagrees with the proposed definition of SOL exceedance. Hoosir supports the following:

1. The SDT failed to assess and recognize that the proposed SOL exceedance definition will cause **huge unintended consequences on large spectrum of the Industry's participants**.

2. The first major problem with the SDT's proposed definition of the SOL exceedance is **that it would expose a large number of TOPs and RCs to compliance risk unless enormous resources and efforts are added within each TOP's/RC's organization to keep up with (an order of magnitude) higher compliance administrative burden**.

3. The second major problem is that this definition is driven by SDT's belief that the definition would "trigger implementation of Operating Plan". However, 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 a potential unintended outcome to avoid the administrative burden is operating **in an unnecessarily conservative operation.** We believe the SDT has ignored a fundamental fact that the implementation of Operating Plan, even in current industry's practice, is already being triggered by existing mechanisms, such as SCADA operating alarms, RTCA results, principles of reliable operations and high quality operator's training.

4. The role of NERC adopted definition of SOL exceedance definition, 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 this infrastructure**. In other words the *SOL exceedance definition should be focused on defining what is considered to be **unacceptable operation** rather than what should be **good operating practice based recommendable operation***.

Therefore, we strongly **recommend that the SDT defers voting/ballots** on this item until such time that the following tasks are completed:

- **Perform comparative analysis of existing SOL definitions nation-wide**, in order to get an informed insight as to where majority of industry's participants stand on this definition.

- **Perform analysis of additional staffing resources and tools** that would be needed to implement proposed definition.

- **Outline and assess compliance driven administrative burden** that the proposed definition would impose on numerous entities in terms of providing an evidence of compliance that they initiated an Operating Plan for each single event of SOL exceedance.

- **Evaluate a risk of overwhelming and distracting real-time operations people** with a burden of significantly increased communication

requirements associated numerous instances of marginally relevant localized SOL exceedances.

- **Assess the impact of significantly constraining business in the industry** associated with the industry's **inability to approve and perform numerous scheduled outages** (with many of them mandated by other NERC standards), as this conservative definition of SOL exceedance would simply make impossible many of these outages to proceed without causing SOL exceedances.

- Assess the impact that the proposed definition would have **on efficiency of market operations and associated cost**.

We re-iterate our ***recommendation that SDT re-considers adoption of the SOL exceedance that is currently in effect in MISO Reliability footprint***, based on the following advantages of the MISO definition when compared with the SDT's proposed definition:

1. It is *much more realistic in recognizing reality of existing transmission infrastructure and human resources allocated to operate such an infrastructure*

2. *It would provide for significantly less administrative burden* on numerous Industry's entities related to providing evidences of compliance.

3. It would provide *comparably reliable operation* of power systems.

4. It is *based on physical limitations of various components of transmission facilities* as opposed to being based on "intention to trigger implementation of Operating Plan".

5. It would *prevent potentially huge increase of cost* of market operations.

6. It provides *more clarity and avoids ambiguity and interpretation issues*.

7. It is *much more acceptable to vast majority of Industry participants* as opposed to relatively small subset of industry participants that can afford use of advanced tools and other resources, including, but not limited to staffing and support personnel.

MISO Reliability footprint wide SOL Exceedance occurs if system operating state indicates any of the following:

- ***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.***
- ***Any established stability limit (non-IROL) is exceeded for longer than the 30 minutes or defined by Operating Plan.***
- ***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.***
- ***Projected post-Contingent voltage on a BES Facility is less than the Emergency low voltage limit for longer than 30 minutes with NO agreed upon Post Contingency Action Plan that would mitigate the condition if the Contingency were to occur.***

Likes 0	
Dislikes 0	

Response

John Seelke - LS Power Transmission, LLC - 1

Answer	No
Document Name	

Comment

See the response to Q7.

Likes 0	
Dislikes 0	

Response

Michael Jones - National Grid USA - 1,3,5

Answer	No
Document Name	

Comment

Typically there are additional Thermal ratings above the "normal" limit that have a time frame associated with them. For example an emergency limit may be a 15 minute rating, i.e. the flow can be at the emergency rating for 15 minutes. Therefore, by design, being above the normal rating is not going to result in damage to the BES elements. Therefore the 1st bullet in the SOL Exceedance definition should be revised to
"Actual flow through a Facility is above the Facility's Rating and the associated allowable time frame is exceeded.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

BPA believes that a TOP should be able to exceed a Normal Rating while utilizing an Emergency Rating (with a time-dependency) without logging an SOL Exceedance or notifying their RC of the actions taken (the action taken was to use an Emergency Rating). Using an Emergency Rating for the appropriate amount of time has no impact to system reliability and is using the "applicable" rating as identified in the NERC SOL Whitepaper.

Given the drafting team's SOL Exceedance proposal, a TOP would have to document their initiation of an Operating Plan and call their RC each time a Normal Rating is exceeded. BPA believes that this is an undue burden on the TOP and their RC and that the use of an Emergency Rating is normal operating procedure, not an SOL Exceedance.

BPA proposes this definition for SOL Exceedance:

An operating condition or analysis result characterized by any of the following, as determined in Real time Assessments (RTA) or Operational Planning Analysis (OPA):

The pre-contingency state indicates any of the following:

- *Actual flow through a Facility is above the Facility's highest Emergency Rating, or above an Emergency Rating for longer than the associated time*
- *Actual bus voltage is below the System Voltage Limit*

- *Actual bus voltage is above the highest System Voltage Limit, or the actual bus voltage is above a time-dependent System Voltage Limit for longer than the associated time*
- *A stability limit established to prevent instability without a Contingency is exceeded*
- *A stability limit established to prevent the Contingency from resulting in instability is exceeded*

The calculated post -Contingency state indicates any of the following:

- *Flow through a Facility is above the Facility's highest Emergency Rating, or above a Facility Rating for which there is not sufficient time to reduce the flow to established acceptable levels should the Contingency occur*
- *Bus voltage is outside the highest or lowest System Voltage Limit, or outside a System Voltage Limit for which there is not sufficient time to bring the bus voltage to established acceptable levels should the Contingency occur*
- *Defined stability performance criteria are not met*

The proposed NERC defined term System Voltage Limit is used in the proposed definition of SOL Exceedance. System Voltage Limit is in a separate NERC posting out for comment, but since BPA will be proposing a revision to the definition of System Voltage Limit, BPA has used this revised definition in the comments submitted by BPA on the SOL Exceedance definition. Subsequently, BPA thinks it is relevant to share this revised definition with the drafting team now.

BPA proposes the following revisions to the definition of System Voltage Limit:

"The minimum steady -Contingency and post -Contingency) that provide for acceptable System performance. The maximum steady performance."

When addressing the post-Contingency bus voltage in the SOL Exceedance, the use of "emergency" is redundant given BPA's revised definition of System Voltage Limit because "Emergency Rating" is included in the revised definition.

Likes 0	
Dislikes 0	

Response

Terry Volkmann - Glencoe Light and Power Commission - 1

Answer	No
Document Name	

Comment

Glencoe re-iterates our strong disagreement with the proposed definition of SOL exceedance. We express our disappointment with SDT's reluctance to incorporate our original comments and suggested changes that we submitted during the August 2016 commenting period.

The SDT failed to assess and recognize that the proposed SOL exceedance definition will cause **huge unintended consequences on large spectrum of the Industry's participants**.

The first major problem with the SDT's proposed definition of the SOL exceedance is **that it would expose a large number of TOPs and RCs to compliance risk unless enormous resources and efforts are added within each TOP's/RC's organization to keep up with (an order of**

magnitude) higher compliance administrative burden.

The second major problem is that this definition is driven by SDT's belief that the definition would "trigger implementation of Operating Plan". However, 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 a potential unintended outcome to avoid the administrative burden is operating **in an unnecessarily conservative operation.** We believe the SDT has ignored a fundamental fact that the implementation of Operating Plan, even in current industry's practice, is already being triggered by existing mechanisms, such as SCADA operating alarms, RTCA results, principles of reliable operations and high quality operator's training.

The role of NERC adopted definition of SOL exceedance definition, 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 this infrastructure**. In other words the *SOL exceedance definition should be focused on defining what is considered to be* ***unacceptable operation*** *rather than what should be* ***good operating practice based recommendable operation***.

Therefore, we strongly **recommend that the SDT defers voting/ballots** on this item until such time that the following tasks are completed:

Perform comparative analysis of existing SOL definitions nation-wide, in order to get an informed insight as to where majority of industry's participants stand on this definition.

Perform analysis of additional staffing resources and tools that would be needed to implement proposed definition.

Outline and assess compliance driven administrative burden that the proposed definition would impose on numerous entities in terms of providing an evidence of compliance that they initiated an Operating Plan for each single event of SOL exceedance.

Evaluate a risk of overwhelming and distracting real-time operations people with a burden of significantly increased communication requirements associated numerous instances of marginally relevant localized SOL exceedances.

Assess the impact of significantly constraining business in the industry associated with the industry's **inability to approve and perform numerous scheduled outages** (with many of them mandated by other NERC standards), as this conservative definition of SOL exceedance would simply make impossible many of these outages to proceed without causing SOL exceedances.

Assess the impact that the proposed definition would have **on efficiency of market operations and associated cost**.

We re-iterate our ***recommendation that SDT re-considers adoption of the SOL exceedance that is currently in effect in MISO Reliability footprint***, based on the following advantages of the MISO definition when compared with the SDT's proposed definition:

It is *much more realistic in recognizing reality of existing transmission infrastructure and human resources allocated to operate such an infrastructure*

It would provide for significantly less administrative burden on numerous Industry's entities related to providing evidences of compliance.

It would provide *comparably reliable operation* of power systems.

It is *based on physical limitations of various components of transmission facilities* as opposed to being based on "intention to trigger implementation of Operating Plan".

It would *prevent potentially huge increase of cost* of market operations.

·It provides *more clarity and avoids ambiguity and interpretation issues*.

It is *much more acceptable to vast majority of Industry participants* as opposed to relatively small subset of industry participants that can afford use of advanced tools and other resources, including, but not limited to staffing and support personnel.

MISO Reliability footprint wide SOL Exceedance occurs if system operating state indicates any of the following:

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.

Any established stability limit (non-IROL) is exceeded for longer than the 30 minutes or defined by Operating Plan.

The SDT determined that any **persistent** exceedance of a Normal Rating should be regarded as an SOL exceedance, even if the exceedance occurs for an **acceptable duration**. We disagree with SDT's insistence on using Normal Rating **and re-iterate our recommendation to use Emergency Rating.** The technical rationale for our recommendation is based on the TOP rating methodology which considers all limiting factors for transmission facilities and assesses ***no reliability repercussions as long as the flow on facility is returned below normal rating during time that was assigned for the emergency rating***. In the matter of fact, this is one of main reasons that transmission operators are given an emergency ratings and that fact should be correspondingly recognized in the SOL exceedance definition.

The SDT's rationale to use Normal Rating in order to "trigger implementation of Operating Plan" is confusing. TOPs are perfectly aware of the limitations associated with the use of Emergency Rating and their obligation to return the flow below Normal Rating within specified time-frame**. Furthermore, hard-coded SCADA based operational alarms will trigger implementation of Operating Plan. Therefore, it is absolutely unnecessary to adopt conservative definition of SOL in order to "remind" TOPs and RCs of their well understood obligation to return flow under Normal Rating in specified time-frame**.

Secondly, although SDT stated that the their goal is to improve clarity and eliminate ambiguity they increase ambiguity and open another issue of interpretation by introducing the term **"persistent** exceedance of a Normal Rating". The time of exceedance has to be clearly specified in this component. Otherwise, how will entities, including Auditors, measure "persistency" of exceedance?

The proposed, conservative definition would cause undesirable consequences in terms of administrative compliance burden and unnecessary increase of the cost of market operations while providing marginal benefit to system reliability as TOPs/RCs are under obligation to protect facilities on a contingency basis, which will consequently protect that facility against real-time flow exceedances.

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.***

Component #4 – *The pre* *Outside normal System Voltage Limits* *actual bus voltage is outside emergency system voltage limits*

We disagree with SDT's insistence on using Normal System Voltage Limits and recommend using Emergency Voltage Limits. Our arguments regarding the Component #4 are similar to our comments concerning the Component #3.

The technical rationale for our recommendation is based on the fact that **TOPs/RCs do operate their systems within normal voltage limits during vast majority of the time**. However, there are rare instances when sudden events and changes to operating conditions, or periods during switching long transmission lines, require use of emergency voltage limits. That is why *SOL exceedance definition should be focused on what is considered to be unacceptable operation rather than what should be recommended operation*. Again, the proposed, conservative definition would cause undesirable consequences in terms of administrative compliance burden.

We recommend the following definition:

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.

Component #5 – *The pre* *-Continge*

Component #6 – *The pre* *Stability is* *n-Contingency state i*
exceeded

The SDT apparently concluded that there is a reason to differentiate between stability limit occurring without contingency and stability limit that is contingency based and conditioned. We do not see reason that would be strong enough in order to justify existence of two components related to stability limits.

We believe that the physical nature of the stability limits is best addressed within individual Operating Plans. Therefore, there is no need to separate different natures of stability problems within definition of SOL exceedance. We believe that this is unnecessary complication and could be resolved by merging two subcomponents into the one.

We also 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%).

We recommend the following definition:

· ***Any established stability limit (non-IROL) is exceeded for longer than the 30 minutes or defined by Operating Plan.***

Component #7 – *The calculated post* *e Contin*
above a Facility Rating for which there is not sufficient time to reduce the flow to established acceptable levels should the Contingency occur

The SDT provided clarification of their position by pointing out the (Project 2014 *-03 Highlighted* items in the diagram. The portion highlighted in yellow, according to the SDT's explanation) " is considered an SOL Exceedance because this designation accomplishes the desired outcome by triggering mitigating action through the implementation of an Operating Plan".

First, 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 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 "SOL exceedance" may easily cause an incorrect expectation that TOP/RC control action response to these two types of exceedances should be similar.

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 portion of the definition that states, *"…or above a Facility Rating for which there is not **sufficient time** to reduce the flow to established acceptable levels should the Contingency occur"* is intended to address the operating state highlighted in light blue. **This portion of the definition will be permanent source of major troubles for the industry, from the implementation prospective**. It **introduces ambiguity and confusion, because TOPs/RCs would be faced with hard and sometimes impossible task to determine what actually is "sufficient time" for any specific set of operational circumstances**. This time might be dependent on ramp rates of the units but also on efficiency and speed of congestion management procedures (such as LMP binding). **This may also cause huge cost to market operations, while providing marginal benefits to system's reliability**.

We recommend the following definition:

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.

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 think 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 fashion 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 it might be argued that the TOP has to establish a new Short Emergency rating in contrast to agreeing with its RC on post-contingency action plan. Issuing a new Short Term Emergency rating should be considered as a legitimate alternative, indeed. **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**. Consequently, each TOP and RC would 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

Kayleigh Wilkerson - Lincoln Electric System - 1,3,5,6

Answer	No
Document Name	

Comment

It is felt that an SOL Exceedance has not occurred until both a limit and corresponding time frame have been surpassed, which is supported by the SOL whitepaper. If a Facility has a Normal Rating and corresponding 4-hour Emergency Rating, reliable operation can occur even after surpassing the Normal Rating (but still less than the Emergency Rating) for less than 4 hours. Operating in an allowed reliable state should not be an SOL Exceedance. SOL Exceedances should be to the true binding limitations of the system for purposes of consistency. This does not preclude an operator from taking action, but should not be required if reliable system operation has been determined within this range. This should be true for both pre- and

post-contingent discussions as long as mitigation can take place within the allotted timeframe.

As currently written, pre-contingent and post-contingent definitions are inconsistent. A post-contingent Normal Rating exceedance that can be mitigated with its allowable timeframe would immediately become an SOL exceedance if the contingency occurs.

Suggested language as follows:

*A **binding and valid** operating condition or analysis result characterized by any of the following, as determined in Real etime Assessments (RTA) or Operational Planning Analysis (OPA):*

The pre -Contingency state indicates any of the following:

- *Actual flow through a Facility is above the Facility's **respective rating (Normal or Emergency) longer than the allowable time defined by the TOP***
- *Actual bus voltage is outside **acceptable** System Voltage Limits **longer than the allowable time defined by the TOP***
- *A stability limit established to prevent instability without a Contingency is exceeded*
- *A stability limit established to prevent the Contingency from resulting in instability is exceeded*

The calculated post -Contingency state indicates any of the following:

- *Flow through a Facility is above the Facility's highest Emergency Rating, or above a Facility Rating for which **it is known that flow would exceed the rating longer than the respective allowable time defined by the TOP should the contingency occur***
- *Bus voltage is outside the highest or lowest emergency System Voltage Limit, or outside a System Voltage Limit for which **it is known that the voltage would remain outside the limit longer than the respective timeframe defined by the TOP** should the Contingency occur*
- *Defined, non-limit based stability performance criteria are not met as determined by those entities with the capabilities and processes to do so*

*Valid and binding shall ensure that conditions or results flagged are of sufficient accuracy and consistency. Nuisance (i.e., intermittent alarming) conditions or results shall not be considered a binding SOL Exceedance.

Likes 0	
Dislikes 0	

Response

Brandon Ware - Colorado Springs Utilities - 1,3,5,6, Group Name Colorado Springs Utilities

Answer	No
Document Name	

Comment

Colorado Springs Utilities finds the Project 2014-03 SDT's rationale for what constitutes an SOL Exceedence to be compelling and reasonable. The proposed definition in question strays from the White Paper produced by that Project (and subsequently adopted as "ERO Enterprise-Endorsed Implementation Guidance") in a significant way - that of being able to fully utilize all applicable thermal ratings and associated time frames in Real-time.

The purpose of SOLs is to "ensure operation within acceptable reliability criteria," and entities establish thermal SOLs, including any so-called "emergency" ratings and their attendant time limits, with those criteria in mind.

From the White Paper, "SOL exceedance occurs when acceptable system performance as described in approved FAC-011-2 is not occurring in Real-time operations as determined by Real-time Assessments. In other words, unacceptable system performance as indicated by Real-time Assessments equates to SOL exceedance." In other, other words; operating, Real-time, with MW flows above a Facility's normal/continuous thermal rating but below a time-limited "emergency" rating for a time not exceeding the applicable time-limit is acceptable system performance and, thus, not an SOL Exceedance. This is straight-forward logic, and conforms with the White Paper you reference.

TOP-001-3, R14, requires, "Each Transmission Operator shall initiate its Operating Plan to mitigate a SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment." Colorado Springs Utilities believes this requirement is met, in spirit and in letter, by an entity implementing an Operating Plan to prevent exceeding the time limit imposed by any specific, applicable thermal SOL. This requirement would also be met, in spirit and in letter, by an entity recognizing that operating slightly above the normal/continuous rating (but below the time-limited "emergency" rating) will only persist for a time less than the applicable time limit due to the forecasted load curve and taking no specific action other than monitor.

Therefore, Colorado Springs Utilites requests changing the first bullet under the "pre-Contingency" list to read:

• Actual flow through a Facility is above the applicable Facility Rating for an unacceptable time duration

Likes 0	
Dislikes 0	

Response

Thomas Foltz - AEP - 3,5

Answer	No
Document Name	

Comment

While AEP agrees overall with the proposed definition, we are unsure of the need to include the text “Real-Time monitoring.” Unlike Real-time Assessments and Operational Planning Analysis, the phrase “Real-Time monitoring” is not a NERC glossary term. If “Real Time Assessment” is not already encompassing enough, what additional operating conditions or analysis would be brought into scope by including “Real-Time monitoring” in the definition?

AEP seeks clarity on the use of the term “calculated” relative to the post-contingency state. Nowhere in the technical justification, or as phrased in the question above, does it clarify the need to distinguish between calculated or actual post-contingency states.

Likes 0	

Dislikes 0	
Response	
Wendy Center - U.S. Bureau of Reclamation - 1,5	
Answer	Yes
Document Name	
Comment	
The addition of the definition of SOL Exceedance is necessary in conjunction with the modification of the definition of SOL.	
Likes 0	
Dislikes 0	
Response	
Laura Nelson - IDACORP - Idaho Power Company - 1	
Answer	Yes
Document Name	
Comment	
Idaho Power agrees with the proposed definition, but recommends a wording change to the post-contingency facility rating bullet. Instead of “the Facility’s highest Emergency Rating,” the definition should state that flows should not exceed “the Facility’s highest Emergency Rating for the operating conditions.” For example, winter ratings should not be used for summer operating conditions.	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no ISO-NE and NGrid	
Answer	Yes
Document Name	
Comment	
We think the “or analysis result” is not necessary considering the reference to RTA and OPA. We appreciate the introduction of time to reduce the flow in the assessment of an operating condition. We suggest to reword “A stability limit established to prevent a (instead of the) Contingency from resulting in instability is exceeded”. Also, same comment as for the SOL definition regarding the use of the non-defined term stability limit and the link with the interface concept.	

Likes 0	
Dislikes 0	
Response	
Scott Downey - Peak Reliability - 1	
Answer	Yes
Document Name	
Comment	
Peak agrees with the SDT's proposed defintiion of SOL Exceedance and with the arguments set forth in question #4 and with those set forth in the supporting document, "NERC Glossary Definitions: System Operating Limit and SOL Exceedance Rationale."	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
The proposed definition makes clear the concept of SOL Exceedance as separate from an SOL.	
Likes 0	
Dislikes 0	
Response	
Quintin Lee - Eversource Energy - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Aubrey Short - FirstEnergy - FirstEnergy Corporation - 1,3,4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Hien Ho - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	

Comments: Texas RE generally agrees with the SDT's approach to separate the definition of System Operating Limits (SOLs) from the definition of an "SOL Exceedance." In particular, Texas RE agrees with the NERC-endorsed implementation guidance that "[i]t is important to distinguish operating practices and strategies from the SOL itself." That is to say, while SOLs are based on an entity's actual set of Facility Ratings, voltage limits, and Stability Limits monitored in pre- and post-contingency states, SOL Exceedances should reflect performance within all applicable limits over the time horizon at issue. The SDT appears to take appropriate steps to clarify that distinction.

With these general comments in mind, Texas RE notes one area that could further enhance the new SOL and SOL Exceedance definitions. In particular, both the SOL and SOL Exceedance definitions refer to "stability limits" and do use the existing NERC "Stability Limit" definition. "Stability Limit" is currently defined as: "[t]he maximum power flow possible through some particular point in the system while maintaining stability in the entire system or the part of the system to which the stability limit refers." The SDT should consider using the existing Stability Limit definition or, alternatively, revise the definition to reflect the new SOL and SOL Exceedance definitions. At a minimum, Texas RE requests that the SDT identify the aspects of the existing Stability Limit definition that warrant using the non-defined term.

Likes 0	
Dislikes 0	
Response	

5. Considering the explanations provided here and further explained in the definitions rationales, do you agree that the proposed SOL Exceedance definition should include this bullet item? Please explain your response and/or provide alternative language.

Thomas Foltz - AEP - 3,5

Answer	No
Document Name	

Comment

Question #5 states that "If a TOP or a RC does not use real-time tools in this manner, then this bullet of the proposed SOL Exceedance definition would not apply to that TOP or RC, and the fourth bullet under the pre-Contingency section of the SOL Exceedance definition would govern stability performance." While we agree with this view, we do not believe it is obvious or apparent when looking solely at the proposed definition only. We believe any such clarity or insight should be added to the definition itself.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

While the intention is good, stability performance criteria are more subjective than thermal and voltage criteria. The acceptability of stability performance may vary more than that of thermal and voltage acceptability. This definition may unnecessarily invite the determination of non-compliance.

Likes 0	
Dislikes 0	

Response

Brandon Ware - Colorado Springs Utilities - 1,3,5,6, Group Name Colorado Springs Utilities

Answer	No
Document Name	

Comment

Colorado Springs Utilities is not so optimistic to believe that, "If a TOP or a RC does not use real-time tools in this manner, then this bullet of the proposed SOL Exceedance definition would not apply to that TOP or RC …" We believe it is the natural tendancy of a regulatory body to enforce

regulations rather indiscriminately once codified, regardless of the intent of the authors. Colorado Springs Utilities is also bemused by the presumption that entities won't take appropriate responses without a regulatory "trigger."

Likes 0	
Dislikes 0	

Response

Kayleigh Wilkerson - Lincoln Electric System - 1,3,5,6

Answer	No
Document Name	

Comment

Without stating in some way the rationale in the definition itself, it could easily be interpreted that some form of action would be required of all entities, not just those that have the capability to perform these types of studies. It is clear that the intent is not requiring real-time stability analysis tools; therefore, a clear distinction must be made to ensure this only applies to certain entities.

Suggested language:

*Defined, **non-limit based** stability performance criteria are not met **as determined by those entities with the capabilities and processes to do so***

Likes 0	
Dislikes 0	

Response

Terry Volkmann - Glencoe Light and Power Commission - 1

Answer	No
Document Name	

Comment

We consider this portion of the definition as unnecessary, as it would apply to very limited number of TOPs/RCs that use real-time tools for determining defined stability performance. Established stability limits are sufficiently addressed by the third and fourth bullets under pre-Contingency operations (which we recommend to also be merged within one clearly defined stability related bullet. Those entities that use real-time stability tools should use the third and fourth bullets under pre-Contingency operations as well, with understanding that their stability limits might vary in real-time as opposed to be fixed/established.

Likes 0	
Dislikes 0	

Response

Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
BPA suggests that the definition spell out: “If a TOP or a RC does not use real-time tools in this manner, then this bullet of the proposed SOL Exceedance definition would not apply to that TOP or RC, and the fourth bullet under the pre-Contingency section of the SOL Exceedance definition would govern stability performance.” An entity should not have to search for when it is applicable. BPA would like the context added to the definition.	
Likes 0	
Dislikes 0	
Response	

John Seelke - LS Power Transmission, LLC - 1	
Answer	No
Document Name	
Comment	
See the response to Q7.	
Likes 0	
Dislikes 0	
Response	

Bob Solomon - Hoosier Energy Rural Electric Cooperative, Inc. - 1	
Answer	No
Document Name	
Comment	
This portion of the definition as unnecessary, as it would apply to very limited number of TOPs/RCs that use real-time tools for determining defined stability performance. Established stability limits are sufficiently addressed by the third and fourth bullets under pre-Contingency operations (which we recommend to also be merged within one clearly defined stability related bullet. Those entities that use real-time stability tools should use the third and fourth bullets under pre-Contingency operations as well, with understanding that their stability limits might vary in real-time as opposed to be fixed/established.	
Likes 0	
Dislikes 0	
Response	

Theresa Allard - Minnkota Power Cooperative Inc. - 1	
Answer	No
Document Name	
Comment	

See comments submitted by Glencoe Light and Power Commission.

Likes 0	
Dislikes 0	
Response	

Allie Gavin - International Transmission Company Holdings Corporation - 1 - MRO,SPP RE,RF	
Answer	No
Document Name	
Comment	

Including this bullet seems to put additional burden on TOP's and RC's utilizing real time tools to determine if stability criteria are being met. This may inadvertently discourage entities from implementing these types of real time tools that could help to enhance reliability. In addition, the rationale document states that "If the TOP or RC does not utilize Real-time stability tools to determ ngency events and to evaluate that response against defined stability performance criteria, but solely utilizes a more traditional approach for establishing stability limits (i.e., limit "values") to address system instability, then the third bullet in the post-Contingency section of the p e definition would not apply to that TOP or RC, and the fourth bullet under the pre-Contingency section c Stability performance." However the definition itself does not list any exclusions or state that this bullet is "above and beyond". The definition used in a standard should clearly state the applicability and should exclude this bullet if the SDT considers it only applicable to entities with certain tools.

Likes 0	
Dislikes 0	
Response	

Julie Hall - Entergy - 6, Group Name Entergy/NERC Compliance	
Answer	No
Document Name	
Comment	

Entergy believes that this bullet item is not necessary since the stability is covered in the pre-contingency part.

Likes 0	

Dislikes 0	

Response

Brian Van Gheem - ACES Power Marketing - 6 - NA - Not Applicable, Group Name ACES Standards Collaborators

Answer	No
Document Name	

Comment

The proposed definition assumes each applicable entity possesses its own on-line stability tools or are actively monitoring its operating parameters to indicate the next Contingency that could result in instability. This may not always be the case. Moreover, what happens if an entity loses the availability of these tools? We believe the addition of this bullet to the definition is unnecessary, as applicable entities will likely take appropriate action to avoid the possible exceedance of a stability limit in the pre -Contingency state.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Our proposed definition covers both established stability limits and stability limits determined using Real-time tools making this distinction unnecessary.

Likes 0	
Dislikes 0	

Response

Michael Brytowski - Great River Energy - 1,3,5,6 - MRO

Answer	No
Document Name	

Comment

The proposed definition assumes each applicable entity possesses its own on-line stability tools or are actively monitoring its operating parameters to indicate the next Contingency that could result in instability. Established stability limits are sufficiently addressed by the third and fourth bullets under pre-Contingency operations. Per our recommendation to utilize the MISO definition in question #4, we believe these two bullets could be combined into one clearly defined stability related condition. Those entities that use real-time stability tools should use the third and fourth bullets under pre-

Contingency operations as well or the single definition, with understanding that their stability limits might vary in real-time as opposed to be fixed/established.	
Likes 0	
Dislikes 0	
Response	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	No
Document Name	
Comment	
This portion of the definition isn't necessary, as it would apply to very limited number of TOPs/RCs that use real-time tools for determining defined stability performance. Established stability limits are sufficiently addressed by the third and fourth bullets under pre-Contingency operations. Those entities that use real-time stability tools should use the third and fourth bullets under pre-Contingency operations as well, with understanding that their stability limits might vary in real-time as opposed to be fixed/established.	
Likes 0	
Dislikes 0	
Response	
Sarah Gasienica - NiSource - Northern Indiana Public Service Co. - 1,3,5,6	
Answer	No
Document Name	
Comment	
NIPSCO feels the use of "sufficient time" in the definition is vague. Who defines "sufficient time"? Is it the RC or the TO? Again NIPSCO likes the MISO definition as it is more descriptive. It reads as follows: SOL Exceedance Based on Projected Post-Contingent Flows, Determined by a Real-Time Assessment A. Projected post-Contingent loading on a BES Facility is greater than the highest emergency rating for longer than 30 minutes with **NO** agreed upon action plan that would mitigate the condition if the Contingency were to occur. B. Projected post-Contingent voltage on a BES Facility is less than the emergency low voltage limit for longer than 30 minutes with **NO** agreed upon action plan that would mitigate the condition if the Contingency were to occur.	
Likes 0	
Dislikes 0	

Response	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	No
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	
Michael Cruz-Montes - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Downey - Peak Reliability - 1	
Answer	Yes
Document Name	
Comment	
Peak agrees that the definition of SOL Exceedance should include the item "Defined stability performance criteria are not met." However, it should be made clear to auditors that this aspect of the defintion applies only to entities that use real-time tools to determine whether the system is meeting stability performance criteria or not. I.e., if a TOP or RC is not using real-time tools, but is instead using actual predetermined stability limits (limit "values") in accordance with the last two bullets in the pre-Contingency section of the proposed definition of SOL Exceedance, then the bullet in question should not apply to that TOP or RC.	
Likes 0	
Dislikes 0	
Response	

Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
ERCOT ISO signs on to the SRC comments.	
Likes 0	
Dislikes 0	
Response	
Gregory Campoli - New York Independent System Operator - 2, Group Name ISO/RTO Standards Review Committee	
Answer	Yes
Document Name	
Comment	
IRC agrees with including this item; however, IRC suggests clarifying that “defined stability performance criteria” refers to criteria defined by the RC in its SOL Methodology, as follows: · Stability performance criteria *defined by the RC in its SOL Methodology* are not met	
Likes 0	
Dislikes 0	
Response	
Wendy Center - U.S. Bureau of Reclamation - 1,5	
Answer	Yes
Document Name	
Comment	
Reclamation recommends, if it is the intent of the third post-Contingency bullet to only apply to those TOPs or RCs that additionally use real-time tools to determine whether defined stability performance criteria are being met, that the bullet explicitly state this applicability criterion so as to provide clarity and avoid confusion.	
Likes 0	
Dislikes 0	

Response	
Lauren Price - American Transmission Company, LLC - 1 - MRO,RF	
Answer	Yes
Document Name	
Comment	
The definition allows TOPs and RCs to recognize that the standards are about maintaining an adequate level of system performance for all customers. Many reliability issues are not adequately captured by traditional SOL values and are best measured by other system parameters. Although ATC agrees that the inclusion of this bullet is acceptable, the term "stability" with this bullet may cause confusion for some entities. Another possible term to use is "Defined system performance criteria are met".	
Likes 0	
Dislikes 0	
Response	
Hien Ho - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Aubrey Short - FirstEnergy - FirstEnergy Corporation - 1,3,4	
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	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no ISO-NE and NGrid	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - SPP RE, Group Name SPP Standards Review Group	
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	

6. The SAR is being revised to authorize the SDT to review the existing body of Reliability Standards and NERC Glossary of terms, and where necessary, modify those standards and definitions to incorporate the new terms and/or definition(s) of SOL Exceedance and System Voltage Limit, as well as the revised definition of System Operating Limit. The SDT has identified the standards and terms they contend would benefit from this incorporation and has included them in separate documents with this posting for your review. Do you agree with the SDT's selections? If not, please explain your response.

Lauren Price - American Transmission Company, LLC - 1 - MRO,RF

Answer	No
Document Name	

Comment

Refer to the comments for Question 3 that identify the need for Stability Limits definition.

Likes 0	
Dislikes 0	

Response

Leonard Kula - Independent Electricity System Operator - 2

Answer	No
Document Name	

Comment

None

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

The current definition of SOL has been the foundation of the existing suite of Reliability Standards, in addition to operating practices, since 2007. Any change in the definition of SOL and the implementation of the new definitions needs to be carefully coordinated with updates to existing standards to accommodate the revised definition.

IRC has identified the following additional four Reliability Standards that it believes should be considered for updates included in the SDT Spreadsheet:

MOD-001-2 R1.1 The requirement should be changed to acknowledge the new definition

PER-004-2 R2 The VSLs needs to be modified since they were written with the 'most limiting' of ratings to be considered. The proposed definition includes the entire universe of ratings which I don't believe was the intent of the VSLs.

VAR-001-4.1 R1 The requirement should be changed to acknowledge the new definition.

Interconnection Reliability Operating Limit Glossary of Terms Need to replace violated with exceeded.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

ERCOT ISO signs on to the SRC comments.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Since we don’t agree that a definition for SOL Exceedance is needed, there is no need to incorporate it into these other standards.

Likes 0	
Dislikes 0	

Response

Brian Van Gheem - ACES Power Marketing - 6 - NA - Not Applicable, Group Name ACES Standards Collaborators	
Answer	No
Document Name	
Comment	
1. We believe the SDT should expand their review to any reference to the phrase “limit,” in the context of System Operating Limits, in the NERC Reliability Standard and NERC Glossary. This includes the addition of glossary terms like Emergency Rating, Flowgate Methodology, Rating, and Reliable Operation. 2. The scope of the SAR should also be expanded to consider the review of applicable requirements that could be retired under various Paragraph 81 criteria.	
Likes 0	
Dislikes 0	
Response	
John Seelke - LS Power Transmission, LLC - 1	
Answer	No
Document Name	
Comment	
See the response to Q7.	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
TPL-001-4 is absent from the list. While TPL-001-4 does not explicitly mention SOLs, Table I does discuss stability limits and facility and voltage ratings.	
Likes 0	
Dislikes 0	
Response	

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3	
Answer	Yes
Document Name	
Comment	
MidAmerican agrees with the SDT’s selection.	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no ISO-NE and NGrid	
Answer	Yes
Document Name	
Comment	
The SDT should take the opportunity of this revision to ensure that clarity exists when other standards refer to deliverables or language used in the current FAC standards. For example, CIP-002 criterion 2.6 refers to a list of facilities critical to the derivation of IROL used in FAC-014, but the current FAC-014 does not explain in any way what critical facilities are versus non-critical facilities.	
Likes 0	
Dislikes 0	
Response	
Scott Downey - Peak Reliability - 1	
Answer	Yes
Document Name	
Comment	
Peak agrees with the SDT's selections.	
Likes 0	
Dislikes 0	
Response	

Terry Volkmann - Glencoe Light and Power Commission - 1	
Answer	Yes
Document Name	
Comment	
Glencoe agrees with the SDT’s selection	
Likes 0	
Dislikes 0	
Response	
Kayleigh Wilkerson - Lincoln Electric System - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Care should be taken on implementing this definition. Once formal (capitalized) definitions become effective, entities will use that explicitly when complying with NERC standards. For example, confusion can occur if standards incorrectly use “SOL exceedance” or “exceeding an SOL” vs “SOL Exceedance. There must be a way to ensure continuity so that the intent of the requirement is clear.	
Likes 0	
Dislikes 0	
Response	
Wendy Center - U.S. Bureau of Reclamation - 1,5	
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	
Sarah Gasienica - NiSource - Northern Indiana Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - SPP RE, Group Name SPP Standards Review Group	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Brytowski - Great River Energy - 1,3,5,6 - MRO	
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	
Julie Hall - Entergy - 6, Group Name Entergy/NERC Compliance	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Aubrey Short - FirstEnergy - FirstEnergy Corporation - 1,3,4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Allie Gavin - International Transmission Company Holdings Corporation - 1 - MRO,SPP RE,RF	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1,3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mike Smith - Manitoba Hydro - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Cruz-Montes - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Theresa Allard - Minnkota Power Cooperative Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bob Solomon - Hoosier Energy Rural Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michelle Amarantos - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Hien Ho - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Brandon Ware - Colorado Springs Utilities - 1,3,5,6, Group Name Colorado Springs Utilities	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

7. If you have any other comments that you haven't already provided in response to the above questions, please provide them here.

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

Answer	
Document Name	

Comment

BPA appreciates your consideration of the time and effort we put into our comments and sincerely hopes that we can influence change.

Likes 0	
Dislikes 0	

Response

John Seelke - LS Power Transmission, LLC - 1

Answer	
Document Name	v4 LSPT Q7 attachment SOL, SOL Exceedance comments.docx

Comment

Due to SBS formatting limitations, the Q7 response is separately attached.

Likes 0	
Dislikes 0	

Response

Brian Van Gheem - ACES Power Marketing - 6 - NA - Not Applicable, Group Name ACES Standards Collaborators

Answer	
Document Name	

Comment

1. We believe the SDT should have included a request for comments on its proposed definition for System Voltage Limit, since this definition directly ties to the SOL definition. The references to normal and emergency in this definition do not aligned with the proposed SOL and SOL Exceedance definitions. Further guidance on what constitutes "acceptable performance" is also needed.
2. We thank you for this opportunity to provide these comments.

Likes 0	
Dislikes 0	

Response

Michael Brytowski - Great River Energy - 1,3,5,6 - MRO	
Answer	
Document Name	
Comment	
Great River Energy believes the SDT should have included a request for comments on its proposed definition for System Voltage Limit, since this definition directly ties to the SOL definition.	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no ISO-NE and NGrid	
Answer	
Document Name	
Comment	
The definitions addressed here achieve the objective of “bring clarity and consistency to the notion of establishing SOLs, exceeding SOLs, and implementing Operating Plans to mitigate SOL exceedances.” It should be noted that the consistency in the definition of SOLs and application of SOLs to determine SOL Exceedances does not translate as a consistent, comparative indicator of reliable system performance. The contingencies applied to establish an SOL Exceedance event are bounded only by a floor of three contingencies mandated by FAC-011. OPAs and RTAs determine SOL Exceedances in accordance with the local SOL methodologies. SOL methodologies may or may not significantly expand the applicable contingencies which define SOL Exceedances. Comparing SOL Exceedances from one SOL methodology to the SOL exceedances of another SOL methodology can be a case comparing apples to oranges.	
Likes 0	
Dislikes 0	
Response	
Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	
Document Name	
Comment	

ERCOT ISO signs on to the SRC comments.

Likes 0	
Dislikes 0	

Response

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

Answer	
Document Name	

Comment

The definitions addressed here achieve the objective of “bringing clarity and consistency to the notion of establishing SOLs, exceeding SOLs, and implementing Operating Plans to mitigate SOL exceedances.”

It should be noted that the consistency in the definition of SOLs and application of SOLs to determine SOL Exceedances does not translate as a consistent, comparative indicator of reliable system performance. The contingencies applied to establish an SOL Exceedance event are bounded only by a floor of three contingencies mandated by FAC-011. OPAs and RTAs determine SOL Exceedances in accordance with the local SOL methodologies. SOL methodologies may or may not significantly expand the applicable contingencies which define SOL Exceedances. Comparing SOL Exceedances from one SOL methodology to the SOL exceedances of another SOL methodology can be a case comparing apples to oranges. However, this project will result in the application of SOLs in the OPA and RTA being consistent regardless of disparity in the methodologies between different RCs.

Likes 0	
Dislikes 0	

Response

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1,3

Answer	
Document Name	

Comment

It is premature for industry to vote on FAC standards using the current definition as requested. While it would be nice to decouple the new standard and the revised SOL definitition, the revised definition fundamentally impacts how the FAC standards will be implemented. Therefore, entities must vote on the NERC standard based on the expected revised SOL definition. Where the combination of the revised definition and standard would cause concerns, then industry should vote negative accordingly. The two things cannot be effectvely decoupled.

Likes 0	
Dislikes 0	

Response

Leonard Kula - Independent Electricity System Operator - 2	
Answer	
Document Name	
Comment	

1. The proposed definition of SOL Exceedance, if employed, will cause confusion as to what is a violation. For example, if flow on a line goes beyond its post-contingency STE (the highest time-based rating), should it not be considered a violation as opposed to an exceedance despite the fact the contingency has not occurred? This new definition should also identify which exceedances should also be treated as violations in the interest of eliminating confusion as to what is a SOL violation vs. what is an exceedance. Alternatively, having a definition for SOL Violation may provide the required clarity.
2. The proposed definition of System Voltage Limit seems unnecessary and the associated background information causes confusion around voltage Facility Ratings vs. System Voltage limits. System voltage limits are either present to either protect system equipment from damage or to prevent instability of the system. Therefore this defined term is not needed. The background from Q3 of this comments form states, “Facility Ratings and System Voltage Limits are not determined by a “study”; rather they are inputs to the “study”. This confuses the term further as a System Voltage Limit definition further as voltage limits which are not Facility Ratings must be studied whenever system configurations are different from what has been previously studied.
3. The proposed definition for SOL must include the glossary term “Stability” definition. Use of lower-case stability with an accompanying explanation is not sufficient to allow industry to be of a common understanding. A common understanding of “Stability” is fundamental in ensuring Interconnected System Reliability. The definition of Stability must be inclusive of what could be deemed instability; this includes thermal violations would cause cascading outages.

Likes 0	
Dislikes 0	
Response	
Wendy Center - U.S. Bureau of Reclamation - 1,5	
Answer	
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	
Lauren Price - American Transmission Company, LLC - 1 - MRO,RF	

Answer	
Document Name	
Comment	
Not Applicable	
Likes 0	
Dislikes 0	
Response	