

Consideration of Comments

Project 2012-INT-02 Interpretation of Interpretation of TPL-003-0a and TPL-004-0 for SPCS

The Project 2012-INT-02 Drafting Team thanks all commenters who submitted comments on the proposed interpretations of TPL-003-0a (R1.3.1, R1.3.10, and R1.5) and TPL-004-0 (R1.3.1, R1.3.7, and R1.4), for System Protection and Control Subcommittee. The interpretations were posted for a 45-day public comment period from October 22, 2012 through December 5, 2012. Stakeholders were asked to provide feedback on the interpretations and associated documents through a special electronic comment form. There were 39 sets of comments, including comments from approximately 103 different people from approximately 69 companies representing 8 of the 10 Industry Segments as shown in the table on the following pages.

Summary Consideration

In the previous initial posting and first formal comment period, the interpretation received supportive comments overall. The interpretation drafting team (“IDT”) made minor non-substantive clarifications to the interpretation based on these comments. The IDT believes it has addressed stakeholder comments in such a way that the interpretation clarity is improved and meets the expectations expressed in comments for reliability and industry approval.

Clarifications Made to Response 1

The IDT replaced the word “consider” with “evaluate” to better align with its use in the standards. There were concerns that entities should be allowed to exercise their professional “engineering judgment” to choose between the scenarios when assessing system performance for Category C and D contingencies and that all scenarios should not require simulation. The IDT clarified that “engineering judgment” is permitted and clarified that in draft 3. Minority comments suggested a need for an implementation plan to the extent the Planning Authority and Transmission Planner might have only been studying either stuck breaker or protection system failure. Based on IDT experience, planning practices do reflect consideration (i.e., “engineering judgment”) of both (i.e., “stuck breaker or protection system failure”) when considering its selection of what produces the “more severe system results or impacts;” therefore, the IDT notes an implementation plan is not needed.

Clarifications Made to Response 2

The IDT also made only minor clarifications to response two. The IDT rephrased the second sentence and added a reference to the requirement being addressed in the two standards for clarity. The clarifying revisions were based on a suggestion regarding minor wording changes to the 2nd sentence of the response which some in industry stakeholders found confusing and awkwardly worded. The sentence was a “run-on” sentence and is now two separate sentences in the draft 3 interpretation.

Additional Information

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

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

Index to Questions, Comments, and Responses

1. Do you agree with the revised Response 1 of this interpretation? If not, what, specifically, do you disagree with? Please provide specific suggestions or proposals for any alternative language.9
2. Do you agree with Response 2 of this interpretation? If not, what, specifically, do you disagree with? Please provide specific suggestions or proposals for any alternative language.....23

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

The Industry Segments are:

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

Group/Individual		Commenter	Organization	Registered Ballot Body Segment										
				1	2	3	4	5	6	7	8	9	10	
1.	Group	Jim Kelley	SERC EC Planning Standards Subcommittee	X				X						
	Additional Member	Additional Organization	Region	Segment Selection										
1.	John	Sullivan	SERC	1										
2.	Charles	Long	SERC	1										
3.	Edin	Habibovich	SERC	1										
4.	James	Manning	SERC	1										
5.	Philip	Kleckley	SERC	1										
6.	Bob	Jones	SERC	1										
7.	Darrin	Church	SERC	1										
8.	Pat	Huntley	SERC	10										
2.	Group	Guy Zito	Northeast Power Coordinating Council											X
	Additional Member	Additional Organization	Region	Segment Selection										

Group/Individual	Commenter	Organization	Registered Ballot Body Segment																	
			1	2	3	4	5	6	7	8	9	10								
1. Alan Adamson	New York State Reliability Council, LLC	NPCC	10																	
2. Carmen Agavrioloai	Independent Electricity System Operator	NPCC	2																	
3. Greg Campoli	New York Independent System Operator	NPCC	2																	
4. Chris de Graffenried	Consolidated Edison Co. of New York, Inc.	NPCC	1																	
5. Gerry Dunbar	Northeast Power Coordinating Council	NPCC	10																	
6. Sylvain Clermont	Hydro-Quebec TransEnergie	NPCC	1																	
7. Peter Yost	Consolidated Edison Co. of New York, Inc.	NPCC	3																	
8. Kathleen Goodman	ISO - New England	NPCC	2																	
9. Michael Jones	National Grid	NPCC	1																	
10. David Kiguel	Hydro One Networks Inc.	NPCC	1																	
11. Christina Koncz	PSEG Power LLC	NPCC	5																	
12. Randy MacDonald	New Brunswick Power Transmission	NPCC	9																	
13. Bruce Metruck	New York Power Authority	NPCC	6																	
14. Silvia Parada Mitchell	NextEra Energy, LLC	NPCC	5																	
15. Lee Pedowicz	Northeast Power Coordinating Council	NPCC	10																	
16. Robert Pellegrini	The United Illuminating Company	NPCC	1																	
17. Si-Truc Phan	Hydro-Quebec TransEnergie	NPCC	1																	
18. David Ramkalawan	Ontario Power Generation, Inc.	NPCC	5																	
19. Brian Robinson	Utility Services	NPCC	8																	
20. Brian Shanahan	National Grid	NPCC	1																	
21. Wayne Sipperly	New York Power Authority	NPCC	5																	
22. Donald Weaver	New Brunswick System Operator	NPCC	2																	
23. Ben Wu	Orange and Rockland Utilities	NPCC	1																	
3.	Group	Greg Rowland	Duke Energy	X		X		X	X											
	Additional Member	Additional Organization	Region	Segment	Selection															
1.	Doug Hils	Duke Energy	RFC	1																
2.	Lee Schuster	Duke Energy	FRCC	3																
3.	Dale Goodwine	Duke Energy	SERC	5																
4.	Greg Cecil	Duke Energy	RFC	6																
4.	Group	Chris Higgins	Bonneville Power Administration	X		X		X	X											
	Additional Member	Additional Organization	Region	Segment	Selection															

Group/Individual	Commenter	Organization	Registered Ballot Body Segment																	
			1	2	3	4	5	6	7	8	9	10								
1. Berhanu Tesema	Transmission Planning	WECC	1																	
2. Deanna Phillips	FERC Compliance	WECC	1, 3, 5, 6																	
5. Group	Frank Gaffney	Florida Municipal Power Agency		X		X	X	X	X											
Additional Member	Additional Organization	Region	Segment Selection																	
1. Timothy Beyrle	City of New Smyrna Beach	FRCC	4																	
2. Jim Howard	Lakeland Electric	FRCC	3																	
3. Greg Woessner	Kissimmee Utility Authority	FRCC	3																	
4. Lynne Mila	City of Clewiston	FRCC	3																	
5. Cairo Vanegas	Fort Pierce Utility Authority	FRCC	4																	
6. Randy Hahn	Ocala Utility Service	FRCC	3																	
6. Group	Sasa Maljukan	Hydro One Networks Inc.		X																
Additional Member	Additional Organization	Region	Segment Selection																	
1. David Kiguel	Hydro One Networks Inc.	NPCC	1																	
2. Hamid HAMADANIZADEH	Hydro One Networks Inc.	NPCC	1																	
3. Ibrahim El-Nahas	Hydro One Networks Inc.	NPCC	1																	
7. Group	Chris Scanlon	Exelon		X		X														
Additional Member	Additional Organization	Region	Segment Selection																	
1. Baltimore Gas and Electric		RFC	1																	
2. ComEd		RFC	1																	
3. PECO		RFC	1																	
8. Group	Sunitha Kothapalli	Puget Sound Energy		X		X														
Additional Member	Additional Organization	Region	Segment Selection																	
1. Zachary Sanford	Puget Sound Energy	WECC	1, 3																	
2. Kebede Jimma	Puget Sound Energy	WECC	1, 3																	
3. Joe Seabrook	Puget Sound Energy	WECC	1, 3																	
4. Ron Forster	Puget Sound Energy	WECC	1, 3																	
5. Eleanor Ewry	Puget Sound Energy	WECC	1, 3																	
9. Group	Ben Engelby	ACES Standards Collaborators												X						
Additional Member	Additional Organization	Region	Segment Selection																	
1. Michael Brytowski	Great River Energy	MRO	1, 3, 5, 6																	

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
2.	John Shaver	Arizona Electric Power Cooperative/Southwest Transmission Cooperative, Inc.	WECC	1, 4, 5									
3.	Amber Anderson	East Kentucky Power Cooperative	SERC	3, 5, 6, 1									
4.	Shari Heino	Brazos Electric Power Cooperative, Inc.	ERCOT	1, 5									
5.	Bob Solomon	Hoosier Energy Rural Electric Cooperative, Inc.	RFC	1									
6.	Megan Wagner	Sunflower Electric Power Corporation	SPP	1									
10.	Group	paul haase	seattle City Light	X		X	X	X	X				
	Additional Member	Additional Organization	Region	Segment Selection									
1.	pawel krupa	seattle city light	WECC	1									
2.	dana wheelock	seattle city light	WECC	3									
3.	hao li	seattle city light	WECC	4									
4.	mike haynes	seattle city light	WECC	5									
5.	dennis sismaet	seattle city light	WECC	6									
11.	Group	John Allen	Iberdrola USA	X									
	Additional Member	Additional Organization	Region	Segment Selection									
1.	Joseph Turano	Central Maine Power	NPCC	1									
2.	Raymond Kinney	New York State Electric & Gas	NPCC	1									
12.	Individual	Tim Ponseti, VP	TVA Transmission Reliability Engineering and Controls	X								X	
13.	Individual	Bill Miller	NERC System Protection and Control Subcommittee (SPCS)	X			X	X				X	X
14.	Individual	Bob Steiger	Salt River Project	X		X		X	X				
15.	Individual	Jonathan Hayes	Southwest Power Pool Reliability Standards development Team		X								
16.	Individual	Steve Rueckert	Western Electricity Coordinating Council										X
17.	Individual	ryan millard	pacificorp	X		X		X	X				
18.	Individual	Oliver Burke	Entergy Services, Inc. (Transmission)	X									
19.	Individual	Thad Ness	American Electric Power	X		X		X	X				
20.	Individual	Nazra Gladu	Manitoba Hydro	X		X		X	X				
21.	Individual	Andrew Z. Pusztai	American Transmission Company, LLC	X									

Group/Individual		Commenter	Organization	Registered Ballot Body Segment											
				1	2	3	4	5	6	7	8	9	10		
22.	Individual	Carter B. Edge	SERC Reliability Corporation												X
23.	Individual	Michael Falvo	Independent Electricity System Operator		X										
24.	Individual	Alice Ireland	Xcel Energy	X		X		X	X						
25.	Individual	Kathleen Goodman	ISO New England, Inc		X										
26.	Individual	Milorad Pasic	Idaho Power Company	X		X									
27.	Individual	Mark Westendorf	Midwest Independent Transmission System Operator, Inc.		X										
28.	Individual	Kenn Backholm	Public Utility District No. 1 of Snohomish County	X		X	X	X	X					X	
29.	Individual	Donald Weaver	New Brunswick System Operator		X										
30.	Individual	Jason Marshall	New England States Committee on Electricity (NESCOE)												
31.	Individual	David Jendras	Ameren	X		X		X	X						
32.	Individual	Steven Mavis	Southern California Edison Company	X											
33.	Individual	Chifong Thomas	BrightSource Energy					X							
34.	Individual	Darryl Curtis	Oncor Electric Delivery Company LLC	X											
35.	Individual	Cheryl Moseley	Electric Reliability Council of Texas, Inc.		X										
36.	Individual	Teresa Czyz	GTC	X											
37.	Individual	Michael Moltane	ITC	X											
38.	Individual	Daniela Hammons	CenterPoint Energy Houston Electric, LLC	X											
39.	Individual	Richard Vine	California Independent System Operator		X										

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

Organization	Supporting Comments of "Entity Name"
Xcel Energy	Duke Energy
New Brunswick System Operator	NPCC Reliability Standards Committee
Public Utility District No. 1 of Snohomish County	Public Utility District No. 1 of Snohomish County supports the comments of Salt River Project.
seattle City Light	Salt River Project (SRP)
Ameren	SERC PSS

1. Do you agree with the revised Response 1 of this interpretation? If not, what, specifically, do you disagree with? Please provide specific suggestions or proposals for any alternative language.

Summary Consideration:

The majority of industry stakeholder comments support the interpretation drafting team’s (“IDT”) draft 2 version of the interpretation to question 1.

Based on the comments received, the IDT made clarifications to the interpretation in regard to the use of the word “evaluate” to better align with its use in the standards. Some commenters raised a concern that the response implied that all possible breaker failures and protection system failures require “evaluation” or simulation. This is not the IDT’s intent and this has been clarified in the response to better reflect the original intent that each contingency condition (i.e., stuck breaker or protection system failure) must be “considered,” however, the selected contingencies evaluated are those deemed to produce the more severe results or impacts (i.e., TPL-003-0a, R1.3.1 and TPL-004-0, R1.3.1).

Some industry comments expressed that the Planning Authority and Transmission Planner should be allowed to exercise professional engineering judgment to choose between the scenarios when assessing system performance for Category C and D contingencies, and that all scenarios should not require simulation. The IDT clarifies that “engineering judgment” is permitted and that clarifications made in the draft 3 version clarify the IDT’s original intent.

A minority opinion was raised by some commenters suggesting a need for an implementation plan to the extent the Planning Authority and Transmission Planner might have only been studying either stuck breaker or protection system failure for TPL-003-0a, Category C, SLG Fault, with Delayed Clearing, Elements C6, C7, C8, and C9 and TPL-004-0, Category D, 3ø Fault, with Delayed Clearing, Elements D1, D2, D3, and D4. Based on the IDT’s experience, entities’ historical practices do reflect consideration (i.e., “engineering judgment”) of both (i.e., “stuck breaker or protection system failure”) when considering the selection of what produces the “more severe system results or impacts;” therefore, the IDT notes an implementation plan is not needed.

Organization	Yes or No	Question 1 Comment
ACES Standards Collaborators	No	(1) We appreciate the drafting team’s response to our previous comment and thank them for addressing the term “evaluated” by adding the parenthetical. However,

		<p>we do not think inclusion of the parenthetical clarifies what is meant by evaluation. We are concerned that auditors will read “evaluate” to mean that a simulation must be performed for all single line-to-ground (SLG) faults. For example, the interpretation states that evaluation of a SLG and three-phase fault “with delayed clearing is required and further defined by footnote (e)” and the statement is not qualified by indicating only those faults with delayed clearing that produce the more severe results. Because footnote (e) simply explains what is meant by delayed clearing and does not qualify it is only those delayed clearing faults that produce the more severe system results or impacts, this interpretation may cause an auditor to expect that simulations are required for all delayed clearing faults. Furthermore, a current simulation is not even required for those delayed clearing faults with more severe system results or impacts but rather “a current or past study and/or system simulation.”</p> <p>Response: The IDT agrees with the concerns raised by the commenter regarding specific contingencies that must be evaluated (simulated) by the Planning Authority and Transmission Planner. The interpretation has been clarified in the use of the word “evaluate” to better align with its use in the standards. Change made.</p> <p>(2) We continue to ask the team to state explicitly that the PC or TP would only have to perform simulations if the contingencies are expected to produce “more severe system results or impacts,” otherwise, simulations are not required. We still believe this clarification is needed to allow PC/TP to consider actual system experience, previous studies, or steady state screening studies for the determination to include stuck breakers or protection system failures.</p> <p>Response: The IDT believes that Requirements R1.3 and R1.3.1 (both standards) are clear on this matter. The interpretation has been clarified in the use of the word “evaluate” to better align with its use in the standards. Change made.</p> <p>(3) We think the response to Q1 is overly broad, redundant, and is still not consistent with the requirements of TPL-003 and TPL-004. We suggest revising the interpretation to make it more succinct and to answer the question directly. We suggest the following as the response to Q1 which addresses our issues in points (1)</p>
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		<p>and (2).</p> <p>“The applicable entity must consider all Category C contingencies per R1.5 in its assessment. However, it is not required to evaluate or perform simulations for all Category C contingencies. Rather, it is only required to perform and evaluate ‘only those Category C contingencies that would produce the more severe system results or impacts.’ This is further supported by R1.3.1 that states the ‘rationale for the contingencies selected for evaluation shall be available for supporting information’ and an explanation of why the remaining simulations would produced less severe system results shall be available as supporting information.”</p> <p>Response: The IDT believes the interpretation response addresses the chief question asked in the interpretation – “does an entity have the option of evaluating the effects of either a stuck breaker or protection system failure contingency.” No change made.</p> <p>(4) The interpretation causes a lot of confusion because of the inconsistent use of “evaluation” in the interpretation as compared to in the standard. The standard appears to consider an evaluation to have a more detailed and specific meaning in R1.3.1 that would include simulation. Whereas the interpretation appears to use “evaluate” more consistently with “consider” in R1.5. Use of “evaluation” in the interpretation appears to be a high level review through engineering judgment. The inconsistent use of the language continues cause us confusion over exactly what is required. We suggest consistent use of these terms so they are aligned with the interpretation and the applicable requirements.</p> <p>Response: The IDT has clarified the interpretation to address the commenter’s concerns. The interpretation has been clarified in the use of the word “evaluate” to better align with its use in the standards. Change made.</p>
<p>Response: The IDT thanks you for your comments. Please see the responses above.</p>		
Salt River Project	No	As written, Response 1 appears to go beyond the requirement of the existing standards. The statement in Response 1, “..... The ordered reading of the text in

		<p>Table 1 in either standard explains that delayed clearing caused by a failure of a protection system or circuit breaker must be evaluated to examine its impact on BES performance”, seems to require that the PA and TP must “evaluate” both breaker failure and protection system failures to determine whether one is more severe than the other.</p> <p>However, R1.3.1 of both Standards states that the “rationale for the contingencies selected for evaluation shall be available as supporting information” and “an explanation of why the remaining simulations would produce less severe system results”, for example:</p> <p style="padding-left: 40px;">”R1.3.1 Be performed and evaluated only for those Category C contingencies that would produce the more severe system results or impacts. The rationale for the contingencies selected for evaluation shall be available as supporting information. An explanation of why the remaining simulations would produce less severe system results shall be available as supporting information.”</p> <p>Since the wording in these standards seems to make a distinction between “evaluation” and “explanation”, the proposed would seem to disallow use of the engineering judgment (accompanied with explanation) by the PA and TP to select the contingencies (breaker failure or protection system failure) for study and evaluation and thus go beyond what is required in both existing standards, and could result in significant increase in planning efforts for only marginally increase in reliability benefits.</p> <p>We suggest that</p> <ol style="list-style-type: none"> 1) the last sentence be changed to read, “The ordered reading of the text in Table 1 in either standard explains that THE MORE SEVERE CONTINGENCIES DUE TO delayed clearing caused by a failure of a protection system or circuit breaker must be evaluated to examine its impact on BES performance” and 2) the sentence “the Planning Authority and Transmission Planner is expected to provide the rationale for the contingencies selected for evaluation and make available the explanation of why the remaining
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		simulations would produce less severe system results as supporting information” be added to end of Response 1.
<p>Response: The IDT thanks you for your comment and suggestion, although not used, the IDT concurs with yours and other stakeholder concerns on what must be “evaluated.” The interpretation has been clarified in the use of the word “evaluate” to better align with its use in the standards. Change made.</p>		
CenterPoint Energy Houston Electric, LLC	No	<p>CenterPoint Energy agrees that the situation that produces the more severe system impacts due to delayed clearing conditions should be considered, regardless of whether the condition resulted from a stuck breaker or protection system failure; however, CenterPoint Energy believes that the interpretation appears to expand upon historical industry practices. Some entities may need to expand their annual assessments to include more detailed evaluations and analyses, which will take a finite period of time.</p> <p>CenterPoint Energy would vote "affirmative" if an implementation period were developed to accompany this interpretation.</p>
<p>Response: The IDT thanks you for your comment. The IDT believes that historical practices do reflect consideration (i.e., “engineering judgment”) of both (i.e., “stuck breaker or protection system failure”) when considering what produces the “more severe system results or impacts;” therefore, the IDT believes an implementation plan is not needed. The concern about the consideration of whether both are considered was raised at the October 24-25, 2011 technical conference at FERC that led to this interpretation request. Requirement R1.3.1, the same in both standards, describes what an entity must provide as evidence that it considered the “more severe system results or impacts.” No change made.</p>		
Western Electricity Coordinating Council	No	<p>It appears that the revised interpretation removes the discretion for the Planning Authority and Transmission Planner to use engineering judgement and system knowledge as rational for the contingencies selected in determining the "more severe system results" and now instead requires studies of both stuck breakers and protection system failure to determine the more severe system results or impacts. Was that the intent of the changes?</p>
<p>Response: The IDT thanks you for your comment and in regard to the concern that the interpretation “removes discretion” for selecting the contingencies evaluated by the entity, the IDT has clarified that “engineering judgment” is permitted in selecting the</p>		

contingencies for evaluation. Change made.		
Oncor Electric Delivery Company LLC	No	<p>Oncor takes the position that the interpretation request by the System Protection and Control Subcommittee (SPCS) is not timely and will not provide additional clarity to complying with TPL-003-0a and TPL-004-0 in light of other NERC initiatives.</p> <p>Many of the concerns expressed (i.e. single point of failure) are already being addressed under the NERC Order 754 data request. Likewise the development of TPL-001-2 under Project 2006-02 Assess Transmission Future Needs and Develop Transmission Plans intends to combine six (6) Transmission Planning standards under a single standard, resulting in the retirement of TPL-003-0a and TPL-004-0.</p>
<p>Response: The IDT thanks you for your comment. As clarified in the draft 1 consideration of comments, the FERC Order No. 754 (i.e., approval of an interpretation to TPL-002-0, R1.3.10) addresses the concern about the non-operation of non-redundant protection systems. The request for interpretation of TPL-003-0a and TPL-004-0 by the SPCS along with the Order No. 754 related data request both support approaches that were formed at the October 24-25, 2011 FERC technical conference concerning Order No. 754. The IDT has provided clarification requested through the interpretation approach. The NERC Standards Committee appropriately accepted the request for interpretation.</p> <p>The development and approval of TPL-001-2 remains a pending matter before Federal Energy Regulatory Commission (FERC).</p>		
Southern California Edison Company	No	<p>The additional time and resources entities would need to devote to the study of all "stuck breaker" and "protection system failure" scenarios in-order to determine which would produce the most severe system results/ impacts would be of marginal benefit for system reliability. Entities should be allowed to exercise their professional engineering judgement to choose between the scenarios when assessing system performance for Category C and D contingencies.</p>
<p>Response: The IDT thanks you for your comment and notes that both contingencies (stuck breaker or protection system failure) must be considered (i.e., "engineering judgment) when determining the situation that produces the "more severe system results or impacts." The applicable entity does not have the option of using one or the other (stuck breaker or protection system failure) when it considers the contingency. The interpretation does not preclude the use of engineering judgment for the contingencies selected. No change made.</p>		

<p>California Independent System Operator</p>	<p>No</p>	<p>The additional time and resources entities would need to devote to the study of all "stuck breaker" and "protection system failure" scenarios in-order to determine which would produce the most severe system results/ impacts would be of marginal benefit for system reliability. Entities should be allowed to exercise their professional engineering judgment to choose between the scenarios when assessing system performance for Category C and D contingencies.</p>
<p>Response: The IDT thanks you for your comment and notes that both contingencies (stuck breaker or protection system failure) must be considered (i.e., “engineering judgment) when determining the situation that produces the “more severe system results or impacts.” The applicable entity does not have the option of using one or the other (stuck breaker or protection system failure) when it considers the contingency. The interpretation does not preclude the use of engineering judgment for the contingencies selected. No change made.</p>		
<p>Puget Sound Energy</p>	<p>No</p>	<p>The response is vague on how to evaluate a protection system failure, as it does not reference any single-point of failure methodology. Also, there is no specific exclusion of DC supply, which should be eliminated as a system component failure. The exclusion of DC supplies is in line with the protection system redundancy evaluation in Order No. 754 Table B.</p>
<p>Response: The IDT thanks you for your comment and believes that the interpretation response addresses the chief question asked in the interpretation with regard to the evaluation of “stuck breaker or protection system failure.” For further information on the genesis of the interpretation, single-point of failure, and the Order No. 754 Data Request, refer to the detailed meeting notes from the October 24-25, 2011 technical conference held at FERC in response to Order No. 754. The project “Order 754” may be found on the NERC website under “Standards/Standards Under Development.” No change made.</p> <p>The concerns about the non-operation of non-redundant (i.e., “single-point of failure”) protection systems is being addressed in the data request that became effective September 1, 2012. The data request aims to determine if “single-point of failure” on protection system is a problem and, if so, to what extent. The results of the data request will lead to further discussion and evaluation of single-point of failure on protection systems.</p> <p>The commenter’s concern regarding non-redundant DC supply loss is more appropriately addressed by the IDT’s response to Question 2. The IDT’s Question 2 response clearly indicates that the applicable entity is permitted engineering judgment in its selection of Category C (TPL-003-0a) and Category D (TPL-004-0) contingencies that would produce the “more severe system results or impacts.” Additionally, the last paragraph indicates “the two standards do not prescribe the specific protection system</p>		

components that must be addressed by the Planning Authority and Transmission Planner in performing the studies required in TPL-003-0a and TPL-004-0” and therefore the IDT’s response does not mandate review of DC supply loss. No change made.

<p>BrightSource Energy</p>	<p>No</p>	<p>While BSE does not disagree with the proposed Response 1 to Question 1, however, as written, Response 1 appears to go beyond the requirement of the existing standards. The statement in Response 1, “..... The ordered reading of the text in Table 1 in either standard explains that delayed clearing caused by a failure of a protection system or circuit breaker must be evaluated to examine its impact on BES performance”, seems to require that the PA and TP “evaluate” both breaker failure and protection system failures to determine whether one is more severe than the other.</p> <p>However, R1.3.1 of both Standards states that only the “rationale for the contingencies selected for evaluation shall be available as supporting information” and “an explanation of why the remaining simulations would produce less severe system results”, for example:</p> <p style="padding-left: 40px;">”R1.3.1 Be performed and evaluated only for those Category C contingencies that would produce the more severe system results or impacts. The rationale for the contingencies selected for evaluation shall be available as supporting information. An explanation of why the remaining simulations would produce less severe system results shall be available as supporting information.”</p> <p>Since the wording in these standards seems to make a distinction between “evaluation” and “explanation”, the proposed would seem to disallow use of the engineering judgment (accompanied with rationale and explanation) by the PA and TP to select the contingencies (breaker failure or protection system failure) for study and evaluation, and thus go beyond what is required in both existing standards, and could result in significant increase in planning efforts for only marginally increase in reliability benefits.</p> <p>BSE suggests that</p> <p style="padding-left: 40px;">1) the last sentence be changed to read, “The ordered reading of the text in</p>
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		<p>Table 1 in either standard explains that the more severe contingencies due to delayed clearing caused by a failure of a protection system or circuit breaker must be evaluated to examine their impact on BES performance” and</p> <p>2) the sentence, “the Planning Authority or Transmission Planner is expected to provide the rationale for the contingencies selected for evaluation, and make available the explanation of why the remaining simulations would produce less severe system results as supporting information”, be added to end of Response 1.</p>
<p>Response: The IDT thanks you for your comment and suggestion, although not used, the IDT concurs with yours and other stakeholder concerns on what must be “evaluated.” The interpretation has been clarified in the use of the word “evaluate” to better align with its use in the standards. Change made.</p>		
<p>Entergy Services, Inc. (Transmission)</p>	<p>No</p>	<p>While we agree that protection system failures should be studied in TPL assessments, we have numerous concerns about the implementation difficulties of such studies. In many instances, breaker failure events were studied as a proxy for protection system failures because breaker failure events were not overly burdensome to simulate in TPL assessments such that assessments could be completed in a timely manner. A breaker failure event was independent of fault location, what types of redundancies were present, and the complexities associated with protection systems. The currently proposed interpretation is not a trivial expansion of scope. The technical and process challenges in completing such studies annually is overly burdensome and may result in overall study quality degradation as entities struggle to complete the analyses every year, especially in regions where rapid transmission expansion is occurring changing system characteristics substantially each year. Simply adding engineering resources is not a viable option due to extremely limited resource pools with the qualifications to perform such work and no end in sight to the shortage.</p> <p>The current definition of a protection system is too broad for application to TPL standards. DC control circuitry is not adequately defined. Is the ground grid part of DC circuitry? What about cable troughs? Failure modes of different protection</p>

		<p>system components are likewise inadequately defined. For example, what failure mode in a voltage sensing device is required to be studied? Loss of potential is usually a single phase loss of potential. Should planners simulate the loss of all three phases or just one, or all possible scenarios? Loss of potential is one mode but others could include introduction of harmonic content or noise into protective relays - how would relay response be predicted? In some cases, failures can result in inappropriate operation; others can result in failure to operate. Would all such permutations need to be assessed to have a valid assessment? How are the protection system engineers and planning engineers to develop valid assumptions such that TPL assessments are valid? This issue was explored in the TPL-001-2 ATFNSDT process and the standard proposes limiting failure analyses to specific protective relay types to reduce complexity and uncertainty in assumptions and analyses. The specific types of relays listed, in the opinion of the ATFNSDT, cover all historical failures which have led to BES events as well as every relay type that performs significant BES protection functions. While some obscure failure in an actual DC circuit wire, terminal block, CT, PT, etc. could occur, would those events not be replicated adequately by simulating a limited set of relay failures such as that proposed by the ATFNSDT? Mitigation plans could certainly focus on developing complete redundancy (not just the relay) for each instance where the relay failure (and potentially related protection system components) could result in BES reliability issues.</p> <p>The other simple but costly potential approach for the industry is to simply make all protection systems redundant. This poses similar challenges due to the inadequate protection system definitions. How would a redundant ground grid be installed? Is a terminal block part of the DC control circuitry? What about the primary winding of a PT or CT - would they need redundancy? What about a multiplexer in a communications circuit? Additionally, the attempt to add redundancy poses additional BES risk. Since protection systems cannot be modified with the facilities they protect in service in many cases, BES outages will have to occur. The proposed TPL has a 7 year implementation plan. Is that long enough to do the massive overhaul this interpretation may result in? What will be the operational risk we have to take to make upgrades? The industry could be forced to choose between</p>
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		<p>violating operating standards and violating planning standards.</p> <p>We appreciate the efforts of the team on these extremely complex industry issues and we realize that perfection is not going to occur. However, we are convinced that limiting the complexity associated with these studies will provide for better overall study quality. The approach contemplated in the proposed TPL substantially raises the bar where protection systems are concerned and will result in more thorough assessments without introducing unmanageable complexity. We support that approach but cannot support the approach contemplated by this interpretation.</p>
<p>Response: The IDT thanks you for your comments.</p> <p>The commenter raises a question regarding the need for an implementation plan and states that “the currently proposed interpretation is not a trivial expansion of scope.” The IDT believes that historical practices do reflect consideration (i.e., “engineering judgment”) of both (i.e., “stuck breaker or protection system failure”) when considering what produces the “more severe system results or impacts;” therefore, the IDT believes an implementation plan is not needed. Requirement R1.3.1 describes what the entity must provide as evidence that it considered the “more severe system results or impacts.” No change made.</p> <p>The comment provided indicates that the “current definition of a protection system is too broad for application to TPL standards.” This concern is better addressed by the IDT’s response to Question 2 and the IDT concluded that the NERC Glossary of Term for “Protection System” is not intended for use in the TPL standards subject to this interpretation request. The IDT clarifies in Question 1 that both contingencies (stuck breaker or protection system failure) must be considered (i.e., “engineering judgment) when determining the situation that produces the “more severe system results or impacts.” The applicable entity does not have the option of using one or the other (stuck breaker or protection system failure) when it considers the contingency. The interpretation does not preclude the use of engineering judgment for the contingencies selected. The IDT did revise its Question 1 response to better align with TPL requirement language in regard to what must be “evaluated” and this may alleviate some of the concerns raised.</p> <p>The feedback provided by Entergy Services, Inc. (Transmission) in some instances goes outside the scope of the questions raised by the SPCS’s questions. For example, one item discussed at length is a question of required redundancy of protection system components and the IDT notes that this topic is being addressed by the on-going Order 754 Data Request and is not relevant to the interpretation request.</p>		

Exelon	Yes	Exelon recommends that a tiered implementation plan (by voltage level, for example) be established. Exelon also recommends that a timeframe of at least 5-years be permitted to review worst-case protection system failure scenarios, perform any required studies, and implement any additional actions that might be necessary to meet the TPL standards under the proposed interpretation of the requirements
<p>Response: The IDT thanks you for your comments. The IDT believes that historical practices do reflect consideration (i.e., “engineering judgment”) of both (i.e., “stuck breaker or protection system failure”) when considering what produces the “more severe system results or impacts;” therefore, the IDT believes an implementation plan is not needed. Requirement R1.3.1 describes what the entity must provide as evidence that it considered the “more severe system results or impacts.” No change made.</p>		
Idaho Power Company	Yes	However, we do support a corrected response 1 made by Duke Energy.
<p>Response: The IDT thanks you for your comment.</p>		
Manitoba Hydro	Yes	No comment.
Duke Energy	Yes	While Duke Energy is voting affirmative on this ballot, we note that the interpretation appears to expand upon historical industry practices. Some entities will need to expand their annual assessment to include more detailed evaluation and complex analysis. As a result, mitigation plans may need to be developed. Therefore, an implementation plan should be developed to accompany this interpretation. We suggest an effective date of the first day of the first calendar quarter eighteen months after applicable regulatory approval.
<p>Response: The IDT thanks you for your comments. The IDT believes that historical practices do reflect consideration (i.e., “engineering judgment”) of both (i.e., “stuck breaker or protection system failure”) when considering what produces the “more severe system results or impacts;” therefore, the IDT believes an implementation plan is not needed. Requirement R1.3.1 describes what the entity must provide as evidence that it considered the “more severe system results or impacts.” No change made.</p>		

SERC Reliability Corporation	Yes	While I agree with the response I am concerned with the technical feasibility of evaluating all possible protection system failures. I prefer the approach taken in proposed standard TPL-001-2 that specifies failure of certain types of relays to test.
Response: The IDT thanks you for your comment.		
SERC EC Planning Standards Subcommittee	Yes	While we agree with the response we are concerned with the technical feasibility of evaluating all possible protection system failures. We prefer the approach taken in proposed standard TPL-001-2 that specifies failure of certain types of relays to test.
Response: The IDT thanks you for your comment.		
TVA Transmission Reliability Engineering and Controls	Yes	While we agree with the response, we prefer the approach taken in the proposed standard TPL-001-2 which specifies failure of certain types of relays to test.
Response: The IDT thanks you for your comment.		
Northeast Power Coordinating Council	Yes	
Bonneville Power Administration	Yes	
Hydro One Networks Inc.	Yes	
Iberdrola USA	Yes	
NERC System Protection and Control Subcommittee (SPCS)	Yes	
Southwest Power Pool Reliability Standards development Team	Yes	

pacificorp	Yes	
American Electric Power	Yes	
American Transmission Company, LLC	Yes	
Independent Electricity System Operator	Yes	
ISO New England, Inc	Yes	
Midwest Independent Transmission System Operator, Inc.	Yes	
Electric Reliability Council of Texas, Inc.	Yes	
GTC	Yes	
ITC	Yes	
Florida Municipal Power Agency	Yes	

2. Do you agree with Response 2 of this interpretation? If not, what, specifically, do you disagree with? Please provide specific suggestions or proposals for any alternative language.

Summary Consideration:

The majority of industry stakeholder comments support the interpretation drafting team’s (“IDT”) draft 2 version of the interpretation to question 2.

In response to industry feedback, the IDT made only minor clarifications to the interpretation for response two. The IDT accepted minor wording changes to the 2nd sentence which some in industry stakeholders found confusing and awkwardly worded. The sentence was a “run-on” sentence and is now two separate sentences in the draft 3 interpretation.

A minority opinion is noted in that some commenters believe that the interpretation response was requiring the evaluation of a non-redundant DC supply or review of the “most severe” protection system component failure. The IDT states in its response to those concerns that the interpretation does not mandate the evaluation of a non-redundant DC supply loss. Additionally, the IDT notes that Requirement R1.3.1 (TPL-003-0a and TPL-004-0) requires the evaluation of contingencies that would produce the “more severe system results or impacts,” not “most severe event.” As clarified in the interpretation, the Planning Authority and Transmission Planner is permitted “engineering judgment” in the selection of those components of a protection system that may lead to “more severe results or impacts.”

Additionally, the interpretation concludes that the NERC defined term for Protection System is not implicitly used in the subject TPL standards. This is emphasized in the last sentence of response two which states, “Without an explicit reference to the NERC glossary term, ‘Protection System,’ the two standards do not prescribe the specific protection system components that must be addressed by the Planning Authority and Transmission Planner in performing the studies required in TPL-003-0a and TPL-004-0.”

Organization	Yes or No	Question 2 Comment
ACES Standards Collaborators	No	(1) Response 2 departs from the plain language of the requirements and actually expands the application of both standards which is not consistent with the standards process. According to the Standards Process Manual, “a valid interpretation response provides additional clarity about one or more requirements, but does not expand on any requirement.” The interpretation clearly states in response 2 that a “protection system component failure that impacts one or more

	<p>protection systems and increases the total fault clearing time requires the Planning Authority and Transmission Planner to simulate the full impact.” This language is contradictory with the earlier statement that the PA and TP are permitted to use engineering judgment in selecting Category C and D contingencies. Nowhere in TPL-003-0a or TPL-004-0 does it say that the TP or PC have to perform full simulations for faults with delayed clearing. This is only required if they would produce the “more severe system results or impacts.” The interpretation that the drafting team is proposing expands on the requirements and should not instruct the PC/TP to perform simulations beyond the existing language in the requirements. The manner in which the PC/TP determines which contingencies would produce “more severe system results and impacts” is not addressed in the standard.</p> <p>Response: The standard allows for engineering judgment in the selection of contingencies to be studied; once the contingency is selected for study, then a simulation has to assess the full impact (delayed clearing and facilities removed).</p> <p>(2) The interpretation states that the Planning Authority and Transmission Planner must “consider the situation” that produces the more severe system results or impacts (i.e., TPL-003-0a, R1.3.1 and TPL-004-0, R1.3.1) due to a delayed clearing condition regardless of whether the condition resulted from a stuck breaker or protection system failure. We have concerns regarding how the PC/TP must document these “considerations” and whether the PC/TP must maintain paperwork when they decide that the delayed clearing condition would not produce a more severe system impact. We believe that the interpretation is requiring additional actions outside the requirements of the standard.</p> <p>Response: The concern raised by the commenter is out of the scope of the request for interpretation and addresses a compliance evidence concern related to “paperwork needed” for selecting (and excluding) contingencies deemed to produce the “more severe system results or impacts.” No change made.</p> <p>(3) The interpretation should clearly state that there is no clear bright line about what constitutes “more severe” results. Thus, applicable entities may use engineering judgment in determining what more severe system results are. There is no clear bright line threshold for when a PC/TP must study and simulate stuck</p>
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	<p>breakers or protection system failures. There are adverse impacts on the industry without clear direction, and the Interpretation Drafting Team may not be able to provide that clarity within the bounds of the Standards Process Manual. For example, if a protection system failure would increase clearing times and would produce “more severe system results and impacts,” it would be required to be studied and simulated. However, if it did not produce the “more severe system results and impacts,” it would not be required to be studied and simulated. There is no clarity on what makes an impact more severe and therefore, the interpretation is requiring the PC/TP to study and simulate all contingencies because not doing so may result in a finding of noncompliance, even though some of those studies would not meet the threshold of “more severe.”</p> <p>Response: The IDT concludes that the concern raised by the stakeholder is out of scope for the SCPC interpretation request. No change made.</p> <p>(4) The interpretation team should consider adding flexibility to considerations that a PC or TP could use to determine the need to simulate single points of failure. As example, actual system experience, past studies, or steady state screening studies could be relied upon. For instance, if there are not problems in the steady state and the contingency is electrically far from any generators, system experience or past studies could prove that transient or dynamic stability problems are not likely to occur.</p> <p>Response: The IDT concludes that the concern raised by the stakeholder is out of the scope of the request for interpretation. The standards are clear in R1.3.1 (TPL-003-0a and TPL-004-0) that the Planning Authority and Transmission Planner must provide “The rationale for the contingencies selected for evaluation shall be available as supporting information.” The request for interpretation does not question the clarity of this language. No change made.</p> <p>(5) We think both parts of the interpretation would benefit from clarifying what is meant by consideration of contingencies in TPL-003-0a R1.5 and TPL-004-0 R1.4 and evaluation in R1.3.1. TPL-003-0a R1.5 and TPL-004-0 R1.4 only require that the TP and PC consider Category C and D contingencies respectively. However, both standards say that a study or simulation is required only for the contingencies “that</p>
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		<p>would produce the more severe system results or impacts” R1.3.1. We would like the drafting team to further clarify this issue.</p> <p>Response: No change made. See responses to items 3 and 4 above.</p> <p>(6) We found a few typos, confusing clauses, and sentences that needed grammatical changes in Q2. In particular, the second sentence in Response 2 in confusing. We believe the sentence would be clearer if stated, “The PC and TP is permitted engineering judgment in its [selection of] Category C and D contingencies for protection system component failures...”</p> <p>Response: The IDT has inserted the clarifying words, “selection of,” as suggested. Change made.</p> <p>(7) Second, the clause in the last sentence after (R1.3.1) “and this would include addressing all protection systems affected by the selected component” should be struck. It’s a run-on sentence and adds more confusion than clarity.</p> <p>Response: The IDT did not strike the interpretation text as suggested and instead broke the 2nd sentence up into two sentences for readability. Change made.</p> <p>(8) Finally, we suggest striking everything in response 2 after the first paragraph because it only adds confusion. The first paragraph is clear that the TP and PC can apply engineering judgment in selecting Category C and D contingencies. What else needs to be said?</p> <p>Response: The IDT believes the entire response is important. For example, the third paragraph contains important insights regarding how the IDT reached its conclusion. No change made.</p> <p>(9) Thank you for the opportunity to comment.</p> <p>Response: The IDT appreciates your thorough review and participation in the NERC standard development process.</p>
<p>Response: The IDT thanks you for your comments. Please see the responses above.</p>		
<p>Oncor Electric Delivery Company</p>	<p>No</p>	<p>Again, Oncor takes the position that the interpretation request by the System</p>

<p>LLC</p>		<p>Protection and Control Subcommittee (SPCS) is not timely and will not provide additional clarity to complying with TPL-003-0a and TPL-004-0.</p> <p>Oncor does agree with the statement in Response 2, “The Planning Authority and Transmission Planner is permitted engineering judgment in its Category C or D contingencies to select the protection system component failures for evaluation that would produce the more severe system results or impact (R1.3.1) and this would include addressing all protection systems affected by the selected component.”</p> <p>However, Oncor takes the position, that current NERC initiatives including NERC Order 754 Data request and current efforts under Project 2006-02 will ultimately address all concerns related to contingency selection validation.</p>
<p>Response: The IDT thanks you for your comment. As clarified in the draft 1 consideration of comments, the FERC Order No. 754 (i.e., approval of an interpretation to TPL-002-0, R1.3.10) addresses the concern about the non-operation of non-redundant protection systems. The request for interpretation of TPL-003-0a and TPL-004-0 by the SPCS along with the Order No. 754 related data request both support approaches that were formed at the October 24-25, 2011 FERC technical conference concerning Order No. 754. The IDT has provided clarification requested through the interpretation approach. The NERC Standards Committee appropriately accepted the request for interpretation.</p> <p>The development and approval of TPL-001-2 remains a pending matter before Federal Energy Regulatory Commission (FERC).</p> <p>The IDT appreciates Oncor’s support of the views stated in our Q2 response.</p>		
<p>Florida Municipal Power Agency</p>	<p>No</p>	<p>FMPA does not agree with the conclusion of the last paragraph that: “the two standards do not prescribe the specific protection system components that must be addressed”. The operative word of footnote e is “any” as in: “Delayed clearing of a Fault is due to failure of ANY protection system component such as a relay, circuit breaker, or current transformer, and not because of an intentional design delay” (emphasis added). In addition, the use of the phrase “such as” by definition is an introduction to a list that is not exhaustive. Hence, it is beyond argument footnote e includes consideration of delayed clearing due to failure of relays, circuit breakers, current transformers, and at least one additional protection system component. Common use of the term “protection system” includes the NERC glossary definition</p>

		<p>plus breakers (e.g., Wikipedia at: http://en.wikipedia.org/wiki/Power_system_protection). Consequently, FMPA believes that the term “protection system” as used in footnote e is more inclusive than the definition of Protection System in the NERC glossary (i.e., to include breakers). As such, footnote e is prescriptive of the minimum set of protection system components that must be considered: the components that comprise the glossary definition of Protection System, plus circuit breakers.</p>
<p>Response: The IDT thanks you for your comments. The IDT reached the interpretation to Q2 upon further review of the standard and consideration of earlier industry comments from the draft 1 posting. The IDT fully vetted and considered this specific issue. Our reasons for the conclusions reached are clearly stated in the last paragraph of the Q2 response. This comment is a minority opinion based on the collective industry responses to the interpretation. No change made.</p>		
<p>ISO New England, Inc</p>	<p>No</p>	<p>ISO New England disagrees with the wording for response 2. The interpretation would force Transmission Planners into studying non-redundant DC supply or battery failure in stability studies which would in turn cause a significantly negative effect on system performance. While the concept of engineering judgment is introduced in the first paragraph, the wording is such that it appears the most severe set of conditions is required.</p> <p>The IDT is not mandating an evaluation of non-redundant DC supply loss. The response clearly indicates that the applicable entity is permitted engineering judgment in its selection of Category C (TPL-003-0a) and Category D (TPL-004-0) contingencies that would produce the “more severe system results or impacts.” Additionally, the last paragraph indicates “the two standards do not prescribe the specific protection system components that must be addressed by the Planning Authority and Transmission Planner in performing the studies required in TPL-003-0a and TPL-004-0.” No change made.</p> <p>Additionally, the second paragraph requires study of a protection system component failure that impacts one or more protection systems. While it may not be clearly defined as being a part of the protection system, if considered, DC supply or battery failure could have significantly longer fault clearing times if all protection system components except the battery are fully redundant. Taking the first and</p>

		<p>second paragraph’s together, it appears that failure of the battery system is a required aspect of testing.</p> <p>Response: See above response. No change made.</p> <p>Transmission Planners should not be required to study the effects of a failed DC supply system as this would show significant impacts that were not intended in the drafting of the interpretation and it is inconsistent with the current draft of TPL-001-2. The DC supply or battery failure should be specifically excluded from consideration in system performance. The cost of retrofitting redundant battery protection systems would clearly outweigh any reliability benefit possibly gained.</p> <p>Response: The IDT notes that explicitly stating in the interpretation that DC supply or battery failure is excluded would be an expansion of the standard and is beyond the scope of the request for interpretation. No change made.</p>
<p>Response: The IDT thanks you for your comments. Please see the responses above.</p>		
Southern California Edison Company	No	same as for question 1
<p>Response: The IDT thanks you for your comments and refers to the response in question 1 for Southern California Edison Company.</p>		
Iberdrola USA	No	<p>Since TPL-003 and TPL-004 refer to “protection system” in lower case, it does not refer to the NERC Glossary definition. Moreover, TPL-003 and TPL-004 have been superseded by TPL-001-2, approved by the NERC Board of Trustees in August 2011. In the development of TPL-001-2, the reference to “protection system” was clarified to be “relay” with a new footnote 13 which further specifies the types of relays to be considered. The Drafting Team should state that “protection system” (lower case) referred to in Footnote (e) includes only the relays identified in TPL-001-2 Table 1 footnote 13.</p>
<p>Response: The IDT thanks you for your comments. The IDT must interpret the existing and mandatory enforceable standards brought to question in this request for interpretation. The development and approval of TPL-001-2 remains a pending matter</p>		

before Federal Energy Regulatory Commission (FERC). As clarified in the draft 1 consideration of comments, the FERC Order No. 754 (i.e., approval of an interpretation to TPL-002-0, R1.3.10) addresses the concern about the non-operation of non-redundant protection systems. The request for interpretation of TPL-003-0a and TPL-004-0 by the SPCS along with the Order No. 754 related data request both support approaches that were formed at the October 24-25, 2011 FERC technical conference concerning Order No. 754. The IDT has provided clarification requested through the interpretation approach. The NERC Standards Committee appropriately accepted the request for interpretation.

<p>Northeast Power Coordinating Council</p>	<p>No</p>	<p>The interpretation would force Transmission Planners into studying non-redundant DC supply or battery failure in stability studies which would in turn cause a significantly negative effect on system performance. While the concept of engineering judgment is introduced in the first paragraph, the wording is such that it appears the most severe set of conditions is required.</p> <p>Response: The IDT’s interpretation does not mandate that non-redundant DC supply loss must be evaluated. The response clearly indicates that the applicable entity is permitted engineering judgment in its selection of Category C (TPL-003-0a and Category D (TPL-004-0) contingencies that would produce the more severe system results or impacts. Additionally, the last paragraph indicates “the two standards do not prescribe the specific protection system components that must be addressed by the Planning Authority and Transmission Planner in performing the studies required in TPL-003-0a and TPL-004-0.” No change made.</p> <p>Additionally, the second paragraph requires study of a protection system component failure that impacts one or more protection systems. While it may not be clearly defined as being a part of the protection system, if considered, DC supply or battery failure could have significantly longer fault clearing times if all protection system components except the battery are fully redundant. Taking the first and second paragraphs together, it appears that failure of the battery system is a required aspect of testing.</p> <p>Response: The IDT notes that response 2 does not require the applicable entity to consider protection elements beyond those listed in footnote ‘e’; however, for a selected protection system component that impacts one or more protection systems and increases the total fault clearing time requires the Planning Authority</p>
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		<p>and Transmission Planner to simulate the full impact (clearing time and facilities removed) on the Bulk Electric System performance. No change made.</p> <p>Transmission Planners should not be required to study the effects of a failed DC supply system as this would show significant impacts that were not intended in the drafting of the interpretation and it is inconsistent with the current draft of TPL-001-2. The DC supply or battery failure should be specifically excluded from consideration in system performance. The Drafting Team should explicitly state that “protection system” (lower case) referred to in Footnote (e) does not include station batteries (unlike “Protection System” in NERC Glossary of Terms).</p> <p>Response: See above response. No change made.</p> <p>Additionally, because TPL-003 and TPL-004 refer to “protection system” in lower case, it does not refer to the NERC Glossary definition. Moreover, TPL-003 and TPL-004 are likely to be superseded by TPL-001-2 after regulatory approvals. In the development of TPL-001-2, the reference to “protection system” was clarified to be “relay” with a new footnote 13 which further specifies the types of relays to be considered. The Drafting Team should state that “protection system” (lower case) referred to in Footnote (e) includes only the relays identified in TPL-001-2 Table 1 footnote 13.</p> <p>Response: The IDT thanks you for your comments. The IDT must interpret the existing and mandatory enforceable standards brought to question in this request for interpretation. The development and approval of TPL-001-2 remains a pending matter before Federal Energy Regulatory Commission (FERC). As clarified in the draft 1 consideration of comments, the FERC Order No. 754 (i.e., approval of an interpretation to TPL-002-0, R1.3.10) addresses the concern about the non-operation of non-redundant protection systems. The request for interpretation of TPL-003-0a and TPL-004-0 by the SPCS along with the Order No. 754 related data request both support approaches that were formed at the October 24-25, 2011 FERC technical conference concerning Order No. 754. The IDT has provided clarification requested through the interpretation approach. The NERC Standards Committee appropriately accepted the request for interpretation.</p>
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Response: The IDT thanks you for your comments. Please see the responses above.

<p>New England States Committee on Electricity (NESCOE)</p>	<p>No</p>	<p>The New England States Committee on Electricity (NESCOE) appreciates this opportunity to comment on a narrow issue raised by ISO New England (ISO-NE) regarding the intended meaning of “protection system component failure” in Response 2.</p> <p>In comments on Draft One of the proposed interpretation, ISO-NE requested clarification on whether a battery system is considered a component of a protection system for purposes of the standard. ISO-NE stated that the answer to this question could have significant implications for the outcome of stability studies, citing as an example that substations may have full redundancy protection in all aspects except for the battery system. NESCOE understands that ISO-NE will provide comments on this Draft 2 version noting that modeling non-redundant DC supply or battery failure was not intended in the drafting of the interpretation and that the cost of requiring redundant battery protection systems in all cases will be clearly outweighed by any reliability benefit gained.</p> <p>Response: The concern is a perception that the requirement is to address failure of a non-redundant DC supply relied upon for protection systems. The response clearly indicates that the applicable entity is permitted engineering judgment in its selection of Category C (TPL-003-0a and Category D (TPL-004-0) contingencies that would produce the more severe system results or impacts.</p> <p>NESCOE shares ISO-NE’s concern that the latest version of Response 2 does not resolve the ambiguity related to modeling protection system failures and whether battery systems are distinguished from other components. Specifically, the language in paragraph one provides that the planning authority and transmission planner may exercise “engineering judgment” in selecting protection system component failures for study. However, the subsequent paragraph appears to require study of the most severe event, which absent clarification could be read to mandate the modeling of battery failure. New England consumers should not be exposed to cost increases due to a lack of clarity. Nor, as in all cases, should consumers bear costs that are not justified by measurable reliability benefits.</p>
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		<p>NESCOE requests that the IDT squarely address and resolve this ambiguity in a subsequent version of the proposed interpretation. Thank you for your consideration of these comments.</p> <p>Response: The IDT notes that the standard in R1.3.1 requires evaluation of contingencies that would produce the “more severe system results or impacts,” not “most severe event.” As clarified in the interpretation, the Planning Authority and Transmission Planner are permitted engineering judgment in the selection of those components of a protection system that may lead to “more severe results or impacts” than others. For example, if the entity believes that a non-redundant CT failure would likely lead to more severe system results or impacts than a stuck breaker, then the entity may select that condition for evaluation. The interpretation concludes that “the two standards do not prescribe the specific protection system components that must be addressed by the Planning Authority and Transmission Planner in performing the studies required in TPL-003-0a and TPL-004-0.” No change made.</p>
<p>Response: The IDT thanks you for your comments. Please see the responses above.</p>		
Puget Sound Energy	No	<p>The response is vague on how to evaluate a protection system failure, as it does not reference any single-point of failure methodology. Also, there is no specific exclusion of DC supply, which should be eliminated as a system component failure. The exclusion of DC supplies is in line with the protection system redundancy evaluation in Order No. 754 Table B.</p>
<p>Response: The IDT thanks you for your comment and believes that the interpretation response addresses the chief question asked in the interpretation with regard to the evaluation of “stuck breaker or protection system failure.” For further information on the genesis of the interpretation, single-point of failure, and the Order No. 754 Data Request, refer to the detailed meeting notes from the October 24-25, 2011 technical conference held at FERC in response to Order No. 754. The project “Order 754” may be found on the NERC website under “Standards/Standards Under Development.” No change made.</p> <p>The concerns about the non-operation of non-redundant (i.e., “single-point of failure”) protection systems is being addressed in the Order No. 754 data request that became effective September 1, 2012. The data request aims to determine if “single-point of failure” on protection system is a problem and, if so, to what extent. The results of the data request will lead to further discussion</p>		

and evaluation of single-point of failure on protection systems.

The IDT’s interpretation response does not mandate that non-redundant DC supply loss must be evaluated. The response clearly indicates that the applicable entity is permitted engineering judgment in its selection of Category C (TPL-003-0a) and Category D (TPL-004-0) contingencies that would produce the “more severe system results or impacts.” Additionally, the last paragraph indicates “the two standards do not prescribe the specific protection system components that must be addressed by the Planning Authority and Transmission Planner in performing the studies required in TPL-003-0a and TPL-004-0.” No change made.

ITC	No	We have concerns regarding the use of terms like "engineering judgement" in requirements or interpretations. Such terms are vague and will lead to continued uncertainty as to whether an auditor will find an entity in compliance (i.e., will the "engineering judgement" applied by an entity be acceptable to an auditor?
<p>Response: The IDT thanks you for your comment and believes that R1.3.1 is clear that the applicable entity is permitted engineering judgment based on the wording “for the contingencies selected for evaluation.” The entity must be able to provide “The rationale for the contingencies selected for evaluation shall be available as supporting information.” The standard is also clear that an “explanation of why the remaining simulations would produce less severe system results shall be available as supporting information.” No change made.</p>		
California Independent System Operator	No	
Duke Energy	Yes	<p>Also, while Duke Energy agrees with Response 2, we believe wording changes are needed for clarity in the first paragraph to align it with the third paragraph. Suggest rewording :</p> <p>The term “Delayed Clearing” that is described in Table I, footnote (e) refers to fault clearing that results from a failure to achieve the protection system’s normally expected clearing time. The Planning Authority and Transmission Planner are permitted engineering judgment in selection of their Category C or D contingencies, and selection of the protection system component failures for evaluation that would produce the more severe system results or impact (R1.3.1) and this would include addressing all protection systems affected by the selected component.</p>

<p>Response: The IDT thanks you for your comment and support. The IDT revised the 2nd sentence of its Draft 2 response for clarity and readability based on yours and other industry feedback provided. The sentence now uses the wording “selection of” as suggested and is broken into two sentences in the Draft 3 version.</p>		
Exelon	Yes	Exelon recommends that a tiered implementation plan (by voltage level, for example) be established. Exelon also recommends that a timeframe of at least 5-years be permitted to review worst-case protection system failure scenarios, perform any required studies, and implement any additional actions that might be necessary to meet the TPL standards under the proposed interpretation of the requirements
<p>Response: The IDT thanks you for your comment. The IDT believes that historical practices do reflect consideration (i.e., “engineering judgment”) of both (i.e., “stuck breaker or protection system failure”) when considering what produces the “more severe system results or impacts;” therefore, the IDT believes an implementation plan is not needed. Requirement R1.3.1, the same in both standards, describes what an entity must provide as evidence that it considered the “more severe system results or impacts.” No change made.</p>		
Idaho Power Company	Yes	However, we do support a corrected response 2 made by Duke Energy.
<p>Response: The IDT thanks you for your comment and support.</p>		
NERC System Protection and Control Subcommittee (SPCS)	Yes	The SPCS appreciates the consideration of its previous comment. The IDT revision to the interpretation addresses the SPCS concern noted during the first posting.
<p>Response: The IDT thanks you for your comment and support.</p>		
Manitoba Hydro	Yes	<p>We generally agree with the response.</p> <p>However, we suggest that the wording provided by Duke Energy should be adopted to add clarity:</p> <p>The term “Delayed Clearing” that is described in Table I, footnote (e) refers to fault clearing that results from a failure to achieve the protection system’s normally</p>

		expected clearing time. The Planning Authority and Transmission Planner are permitted engineering judgment in selection of their Category C or D contingencies, and selection of the protection system component failures for evaluation that would produce the more severe system results or impact (R1.3.1) and this would include addressing all protection systems affected by the selected component.
Response: The IDT thanks you for your comment and support. Please refer to the response provided to Duke Energy.		
Southwest Power Pool Reliability Standards development Team	Yes	We would suggest that the drafting team take a look at the effort surrounding FERC Order No. 754 which is clearly laid out for what to look at and how to look at single point of failure.
Response: The IDT thanks you for your comment and support. The NERC Standards Developer and Technical Advisor assigned to this project are also participants and involved with the Order No. 754 project. No change made.		
SERC EC Planning Standards Subcommittee	Yes	
Bonneville Power Administration	Yes	
Hydro One Networks Inc.	Yes	
TVA Transmission Reliability Engineering and Controls	Yes	
Salt River Project	Yes	
Western Electricity Coordinating Council	Yes	
pacificorp	Yes	
Entergy Services, Inc. (Transmission)	Yes	

American Electric Power	Yes	
American Transmission Company, LLC	Yes	
Independent Electricity System Operator	Yes	
Midwest Independent Transmission System Operator, Inc.	Yes	
BrightSource Energy	Yes	
Electric Reliability Council of Texas, Inc.	Yes	
GTC	Yes	
CenterPoint Energy Houston Electric, LLC	Yes	
Response:		

END OF REPORT