Comment Report

Project Name:	2016-04 Modifications to PRC-025-1 | PRC-025-2
Comment Period Start Date:	7/25/2017
Comment Period End Date:	9/8/2017
Associated Ballots:	2016-04 Modifications to PRC-025-1 PRC-025-2 IN 1 ST

There were 43 sets of responses, including comments from approximately 127 different people from approximately 96 companies representing 10 of the Industry Segments as shown in the table on the following pages.

Questions

1. Do you agree that the proposed new Option 5b in PRC-025-2, Table 1 addresses cases where the applicable entity is unable to achieve the 130% threshold of Option 5a for overcurrent relays? See Figure A also. If not, please explain why and provide an alternative proposal.

2. Do you agree that the proposed revisions to PRC-025-2 – Attachment 1: Relay Settings (including Table 1) for applications involving overcurrent relays clarify that the IEEE device element 50 (i.e., instantaneous) as well as low voltage trip designations commonly referred to as L (long time delay), S (short time delay), and I (instantaneous) by manufacturers are required to comply with the standard? If not, please explain why and provide an alternative proposal.

3. Do you agree that the proposed revisions in the "Application" column of Table 1 for Options 1 through 6 clarify that applicable protective relays associated with "all" listed Elements are to be set using the setting criteria of Table 1? If not, please explain why and provide an alternative proposal.

4. Do you agree that the proposed revisions in Table 1 for Options 14 through 16 address cases where generating facilities are remote to the transmission network by allowing setting criteria based on the simulation of field forcing in response to a 0.85 per unit voltage at the remote end of the line? If not, please explain why and provide an alternative proposal.

5. Do you agree with the removal of the leading term "Pickup" in "Pickup Setting Criteria" in Table 1? If not, please explain why and provide an alternative proposal.

6. Do you agree with the miscellaneous revisions made to the PRC-025-2 – Application Guidelines? If not, please explain why and provide an alternative proposal.

7. Do you agree with implementation period of (1) 12 months for cases with equipment removal or replacement is not necessary, and (2) 36 months where equipment removal or replacement is necessary based on the considerations listed in the Implementation Plan? If not, please provide a justification for increasing or decreasing the proposed implementation periods.

8. Do you agree with the Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) for the requirement in the proposed PRC-025-2? If not, please identify the need here.

9. Do the revisions proposed in PRC-025 provide a cost effective solution to the issues? For example, the revisions (i.e., Options 14b, 15b, and 16b) addressing remote weak generating plants in comparison to a strong transmission system and using the resource capability curve (i.e., Option 5b) to demonstrate loadability over the current 130 percent setting criteria? If not, please identify other cost effective alternatives of the issues addressed in the project.

10. Are you aware of any conflicts between the proposed standard revisions and any regulatory function, rule, order, tariff, rate schedule, legislative requirement, or agreement? If yes, please identify the conflict here.

11. Are you aware of a need for a regional variance or business practice that should be considered with this project? If yes, please identify the need here.

12. If you have any other comments on this Standard that you haven't already mentioned above, 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
Brandon McCormick	Brandon McCormick		FRCC	FMPA	Tim Beyrle	City of New Smyrna Beach Utilities Commission	4	FRCC
					Jim Howard	Lakeland Electric	5	FRCC
					Lynne Mila	City of Clewiston	4	FRCC
					Javier Cisneros	Fort Pierce Utilities Authority	3	FRCC
					Randy Hahn	Ocala Utility Services	3	FRCC
					Don Cuevas	Beaches Energy Services	1	FRCC
					Jeffrey Partington	Keys Energy Services	4	FRCC
					Tom Reedy	Florida Municipal Power Pool	6	FRCC
					Steven Lancaster	Beaches Energy Services	3	FRCC
					Mike Blough	Kissimmee Utility Authority	5	FRCC
					Chris Adkins	City of Leesburg	3	FRCC
					Ginny Beigel	City of Vero Beach	3	FRCC
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	1	RF

						Electric Cooperative, Inc.		
					Shari Heino	Brazos Electric Power Cooperative, Inc.	1,5	Texas RE
					Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					Ginger Mercier	Prairie Power, Inc.	1,3	SERC
					Mark Ringhausen	Old Dominion Electric Cooperative	3,4	SERC
					Tara Lightner	Sunflower Electric Power Corporation	1	SPP RE
					Ryan Strom	Buckeye Power, Inc.	4	RF
					John Shaver	Arizona Electric Power Cooperative, Inc.	1	WECC
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
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
Entergy	Julie Hall	6		Entergy/NERC Compliance	Oliver Burke	Entergy - Entergy Services, Inc.	1	SERC
					Jaclyn Massey	Entergy - Entergy Services, Inc.	5	SERC
DTE Energy - Detroit Edison Company	Karie Barczak	3,4,5		DTE Energy - DTE Electric	Jeffrey Depriest	DTE Energy - DTE Electric	5	RF
					Daniel Herring	DTE Energy - DTE Electric	4	RF

					Karie Barczak	DTE Energy - DTE Electric	3	RF
Tennessee Valley Authority	M Lee Thomas	5		Tennessee Valley Authority	Howell Scott	Tennessee Valley Authority	1	SERC
					Ian Grant	Tennessee Valley Authority	3	SERC
					M Lee Thomas	Tennessee Valley Authority	5	SERC
					Marjorie Parsons	Tennessee Valley Authority	6	SERC
Manitoba Hydro	Mike Smith	1		Manitoba Hydro	Yuguang Xiao	Manitoba Hydro	5	MRO
					Karim Abdel-Hadi	Manitoba Hydro	3	MRO
					Blair Mukanik	Manitoba Hydro	6	MRO
					Mike Smith	Manitoba Hydro	1	MRO
Southern Company - Southern Company Services, Inc.	Pamela Hunter	1,3,5,6	SERC	Southern Company	Katherine Prewitt	Southern Company Services, Inc.	1	SERC
					R. Scott Moore	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 Con-Edison	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
Michael Schiavone	National Grid	1	NPCC
Michael Jones	National Grid	3	NPCC
David Ramkalawan	Ontario Power Generation Inc.	5	NPCC
Quintin Lee	Eversource Energy	1	NPCC
Kathleen Goodman	ISO-NE	2	NPCC
Greg Campoli	NYISO	2	NPCC
Silvia Mitchell	NextEra Energy - Florida Power and Light Co.	6	NPCC
Sean Bodkin	Dominion - Dominion Resources, Inc.	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
Midwest Reliability Organization	Russel Mountjoy	10		MRO NSRF	Joseph DePoorter	Madison Gas & Electric	3,4,5,6	MRO
					Larry Heckert	Alliant Energy	4	MRO
					Amy Casucelli	Xcel Energy	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					Jodi Jensen	Western Area Power Administratino	1,6	MRO
					Kayleigh Wilkerson	Lincoln Electric System	1,3,5,6	MRO
					Mahmood Safi	Omaha Public Power District	1,3,5,6	MRO
					Brad Parret	Minnesota Power	1,5	MRO
					Terry Harbour	MidAmerican Energy Company	1,3	MRO
					Tom Breene	Wisconsin Public Service	3,5,6	MRO
					Jeremy Volls	Basin Electric Power Coop	1	MRO
					Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					Mike Morrow	Midcontinent Independent System Operator	2	MRO
Southwest Power Pool, Inc. (RTO)	Shannon Mickens	2	SPP RE	SPP Standards Review Group	Shannon Mickens	Southwest Power Pool Inc.	2	SPP RE
					Jim Nail	City of Independence,	5	SPP RE

						Power and Light Department		
PPL - Louisville Gas and Electric Co.	Shelby Wade	1,3,5,6	RF,SERC	PPL NERC Registered Affiliates	Charlie Freibert	LG&E and KU Energy, LLC	3	SERC
					Brenda Truhe	PPL Electric Utilities Corporation	1	RF
					Dan Wilson	LG&E and KU Energy, LLC	5	SERC
					Linn Oelker	LG&E and KU Energy, LLC	6	SERC

1. Do you agree that the proposed new Option 5b in PRC-025-2, Table 1 addresses cases where the applicable entity is unable to achieve the 130% threshold of Option 5a for overcurrent relays? See Figure A also. If not, please explain why and provide an alternative proposal.

Karie Barczak - DTE Energy - Detroit Edison Company - 3,4,5, Group Name DTE Energy - DTE Electric

Answer	No
Document Name	

Comment

More clarity is needed on the implementation of Option 5b. "Resource capability" should be defined such that this value can be clearly determined. A detailed example for Option 5b which uses a plot similar to Figure A that discusses "documented tolerances" would be helpful.

Likes 0	
Dislikes 0	

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer	No
Document Name	

Comment

The overcurrent element setting of 130% of the calculated current derived from the maximum aggregate nameplate MVA output at rated power factor is appropriate in most cases. Texas RE recommends keeping the 130% threshold for overcurrent elements and allow for exceptions in those cases where entities are limited by manufacturer requirements or physical limitations.

Likes 0	
Dislikes 0	

Response

Russel Mountjoy - Midwest Reliability Organization - 10, Group Name MRO NSRF

Answer	No
Document Name	

Comment

Option 5b is helpful and a clear improvement. However, Option 5b isn't a complete solution. Not all solar and wind facilities are new. Some wind / solar facilities won't have an outside source that remains in business to provide internal capability curves. Therefore, Option 5 should allow a simulation option where entities can show through a verified model (MOD-026 / MOD-027) that the wind / solar farm will remain on-line for widespread voltage depressions which drives the 130% overcurrent margin reliability requirement.

Likes 1	Jeffrey Watkins, N/A, Watkins Jeffrey
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Option 5b is helpful and a clear improvement. In addition, Reclamation recommends that Option 5 should allow a simulation option where entities can show through a verified model (MOD-026 / MOD-027) that the generator will remain on-line for widespread voltage depressions which drives the 130% overcurrent margin reliability requirement. Or, as approved in PRC-024-2, if Option 5 cannot be satisfied for older equipment, a statement such as, "Document the identification of regulatory or equipment limitations."

Likes 0	
Dislikes 0	

Response

Darnez Gresham - Darnez Gresham On Behalf of: Annette Johnston, Berkshire Hathaway Energy - MidAmerican Energy Co., 1, 3; - Darnez Gresham

Answer	No
Document Name	

Comment

Option 5b is helpful and a clear improvement. However, Option 5b isn't a complete solution. Not all solar and wind facilities are new. Some wind / solare facilities won't have an outside source that remains in business to provide internal capability curves. Therefore, Option 5 should allow a simulation option where entities can show through a verified model (MOD-026 / MOD-027) that the wind / solar farm will remain on-line for widespread voltage depressions which drives the 130% overcurrent margin reliability requirement.

Likes 0	
Dislikes 0	

Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
What is the need for option 5a with 5b being an option? Option 5b shows the correct way protective relays should be set and coordinated with equipement. If the protection can be set above the capability of the equipement output, what would be the reason to set the pickups at 130% above MVA unless you want a fault to cause more damage to the equipement being the clearing time could be delayed?	
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 has a concern that Figure A (page 32 redline version) doesn't provide enough clarity on its purpose in reference to Option 5b. Additionally, we have a concern that the figure is missing the appropriate labeling methodology. We would ask the drafting team to provide more clarity in the Application Guideline Section of the Standard in reference to the figure's significance to Option 5b as well as including the appropriate labeling methodology.	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	

AEP recommends the SDT use the same frame of reference for both the Option 5a in Table 1 and Figure A. As currently written, Table 1 states “The overcurrent element shall not infringe upon…” while Figure A states “Option 5b – Resource capability shall not infringe on…”.

Likes 0	
Dislikes 0	

Response

David Ramkalawan - Ontario Power Generation Inc. - 5

Answer	Yes
Document Name	

Comment

OPG is of the opinion that there is a discrepancy between the Relay setting criteria description for option 5b in Table 1 and the description contain in the Figure A, which should be corrected. Instead of “Option 5b – Resource Capability shall not infringe on the lower tolerance of the protective device” we recommend Figure A should state the following “Option 5b – Protective device overcurrent element settings lower tolerance tripping characteristic shall not infringe on the Resource capability”

Additional clarification is required regarding if asynchronous resource capability accounts for forcing & boosting effects on the steady state fault current (not the subtransient and transient).

Likes 0	
Dislikes 0	

Response

George Brown - Acciona Energy North America - 5

Answer	Yes
Document Name	

Comment

As written, NERC Reliability Standard PRC-025-2 Generator Relay Loadability does not account for equipment limitations of the generator step-up transformer or generation lead line that would not allow an entity to set it’s protective relays to the level as specified within the standard. The SDT needs add additional option for these application that is similar to option 5B.

Likes 0	
Dislikes 0	

Response	
Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Fischette - Michael Fischette - 3	
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	
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	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
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	
Eleanor Ewry - Puget Sound Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Donald Lock - Talen Generation, LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sergio Banuelos - Tri-State G and T Association, Inc. - 1,3,5 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruth Miller - Exelon - 5	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alyssa Hubbard - SCANA - South Carolina Electric and Gas Co. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3	
Answer	Yes
Document Name	
Comment	

Likes 1	OGE Energy - Oklahoma Gas and Electric Co., 1, Pyle Terri
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name RSC no Con-Edison	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Douglas Webb - Douglas Webb On Behalf of: Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jessica Tucker, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jim Flucke, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; - Douglas Webb	
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	
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	
Ann Ivanc - FirstEnergy - FirstEnergy Solutions - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Theresa Rakowsky - Puget Sound Energy, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	
Document Name	
Comment	
Not applicable to BPA.	
Likes 0	
Dislikes 0	
Response	
Normande Bouffard - Hydro-Qu?bec Production - 5	
Answer	

Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	

2. Do you agree that the proposed revisions to PRC-025-2 – Attachment 1: Relay Settings (including Table 1) for applications involving overcurrent relays clarify that the IEEE device element 50 (i.e., instantaneous) as well as low voltage trip designations commonly referred to as L (long time delay), S (short time delay), and I (instantaneous) by manufacturers are required to comply with the standard? If not, please explain why and provide an alternative proposal.

Darnez Gresham - Darnez Gresham On Behalf of: Annette Johnston, Berkshire Hathaway Energy - MidAmerican Energy Co., 1, 3; - Darnez Gresham	
Answer	No
Document Name	

Comment

The NERC standard refers to relays and the Table 1 heading refers to relays, but Pickup was struck and Option 5 refers to overcurrent elements. Where the standard refers to “elements” please add the word “PRC-025 relay” in front to clearly state that only “PRC-025 relays” are applicable, not control systems, not protective algorithms, and not fuses.

If the drafting team meant to include more protective elements than relays, the NERC standard needs to clearly state the protective elements covered. NERC standards are written to zero defect and subject matter experts must clearly understand where the law applies. Until NERC standards allow some room for some small amount of error to be corrected without incurring a violation such as the six sigma or cyber security standards, NERC compliance standards and boundaries must be absolutely clear.

Likes 0	
Dislikes 0	

Response

Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	

Comment

The NERC standard refers to relays and the Table 1 heading refers to relays, but “pickup” was struck and Option 5 refers to overcurrent elements. Where the standard refers to “elements,” Reclamation recommends the drafting team insert the words “PRC-025 relay” to clearly state that only PRC-025 relays are applicable, not control systems, protective algorithms, or fuses.

If the drafting team meant to include more protective elements than relays, Reclamation recommends that the standard clearly state the applicable protective elements. This standard is written to zero-defect and subject matter experts must clearly understand where it does and does not apply. Unless the standard allows some room for a small amount of error to be corrected, the compliance thresholds must be absolutely clear.

Likes 0	

Dislikes 0	
Response	
Russel Mountjoy - Midwest Reliability Organization - 10, Group Name MRO NSRF	
Answer	No
Document Name	
Comment	
The NERC standard refers to relays and the Table 1 heading refers to relays, but Pickup was struck and Option 5 refers to overcurrent elements. Where the standard refers to “elements” please add the word “PRC-025 relay” in front to clearly state that only “PRC-025 relays” are applicable, not control systems, not protective algorithms, and not fuses. If the drafting team meant to include more protective elements than relays, the NERC standard needs to clearly state the protective elements covered. NERC standards are written to zero defect and subject matter experts must clearly understand where the law applies. Until NERC standards allow some room for some small amount of error to be corrected without incurring a violation such as the six sigma or cyber security standards, NERC compliance standards and boundaries must be absolutely clear.	
Likes 0	
Dislikes 0	
Response	
Brandon McCormick - Brandon McCormick On Behalf of: Carol Chinn, Florida Municipal Power Agency, 5, 6, 4, 3; Ginny Beigel, City of Vero Beach, 3; Joe McKinney, Florida Municipal Power Agency, 5, 6, 4, 3; Lynne Mila, City of Clewiston, 4; Richard Montgomery, Florida Municipal Power Agency, 5, 6, 4, 3; Tom Reedy, Florida Municipal Power Pool, 6; - Brandon McCormick, Group Name FMPA	
Answer	No
Document Name	
Comment	
67 and 50 elements/relays should be out of scope due to the possibility of creating a protection sheme that may not pick up when it should. See comments from Exelon.	
Likes 0	
Dislikes 0	
Response	
Ruth Miller - Exelon - 5	

Answer	No
Document Name	
Comment	

With respect to phase directional instantaneous overcurrent supervisory elements (67 or 50) – associated with current-based communication protection systems please consider the following

1. These relays will be affecting loading/generator loadability only if communication system fail and there is a disturbance on the grid. The Standard should not assume both events at the same time.

2. Calculations performed to calculate the settings for these type of relays show that the settings are very close to the 3-phase fault current contributed from the generator in cases where sub-transient reactance of the machine is at a high value. This will compromise the protection scheme because the changes proposed will make the protection scheme very insensitive. In case of a high resistance phase-to-ground fault, the protection scheme will not pick up the fault at the generator end. In some extreme cases, the fault detector relay (67 or 50), if set according to the current draft PRC-025 guidelines, may have to depend on the field forcing provided by the Automatic Voltage Regulator (AVR) before the fault current reaches the setpoint. This will induce unnecessary delays in the protective action and may cause more damage to the BES element.

3. Exelon proposes the following changes:

    i. These types of relays (67 or 50) should be deleted from the scope of this Standard for the reasons described above.

    ii. If there is an issue with communication protection systems such that the pilot protection scheme acts like a simple overcurrent relay, and that condition is alarmed, then it is reasonable to require an entity to correct this condition within a short period of time. Suggest the SDT add a requirement to correct such a condition within a certain timeframe. For example the condition shall be corrected within a calendar quarter and if not resolved then the setpoints of 67 or 50 should be raised to a certain value.

    iii. If SDT still wants to keep these relays within scope in spite of the reasoning/alternatives provided above, the the existing setting criteria the following should be added:
    “Minimum of the criteria 15a (or 15b) or 25% of the sub-transient current contribution from the generator using a pre-fault voltage of 1.0 and generator sub-transient unsaturated reactance and the main power transformer positive sequence reactance.

Likes 0	
Dislikes 0	
Response	
George Brown - Acciona Energy North America - 5	
Answer	No
Document Name	
Comment	

Unfortunately, the addition of “e.g.” does not add clarity. The SDT needs to clearly state what protection function each option in Table 1 applies to.	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Theresa Rakowsky - Puget Sound Energy, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
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	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ann Ivanc - FirstEnergy - FirstEnergy Solutions - 6	
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	
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	
Douglas Webb - Douglas Webb On Behalf of: Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jessica Tucker, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jim Flucke, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; - Douglas Webb	
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 Con-Edison	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
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	
Alyssa Hubbard - SCANA - South Carolina Electric and Gas Co. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sergio Banuelos - Tri-State G and T Association, Inc. - 1,3,5 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Normande Bouffard - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
David Ramkalawan - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Lock - Talen Generation, LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Eleanor Ewry - Puget Sound Energy, Inc. - 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	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
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	
Karie Barczak - DTE Energy - Detroit Edison Company - 3,4,5, Group Name DTE Energy - DTE Electric	
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	
Julie Hall - Entergy - 6, Group Name Entergy/NERC Compliance	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Fischette - Michael Fischette - 3	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

3. Do you agree that the proposed revisions in the "Application" column of Table 1 for Options 1 through 6 clarify that applicable protective relays associated with "all" listed Elements are to be set using the setting criteria of Table 1? If not, please explain why and provide an alternative proposal.

Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3

Answer	No
Document Name	

Comment

No. There is a discussion in the Technical Guidance section that discusses the inclusion of collector system protective elements. However, Table 1 uses the NERC capitalized term "Element" which specifically excludes collector systems via NERC and industry agreement in 2014. This is documented in the NERC bulk Electric System Definition Reference Document dated April 2014, see the cover page and page 21 of 85.

Likes 1	OGE Energy - Oklahoma Gas and Electric Co., 1, Pyle Terri
Dislikes 0	

Response

Russel Mountjoy - Midwest Reliability Organization - 10, Group Name MRO NSRF

Answer	No
Document Name	Project 2016-04 PRC-025-2Final.docx

Comment

No. There is a discussion in the Technical Guidance section that discusses the inclusion of collector system protective elements. However, Table 1 uses the NERC capitalized term "Element" which specifically excludes collector systems via NERC and industry agreement in 2014. This is documented in the NERC bulk Electric System Definition Reference Document dated April 2014, see the cover page and page 21 of 85.

Link: http://www.nerc.com/pa/RAPA/BES%20DL/bes_phase2_reference_document_20140325_final_clean.pdf

Please state that Technical Guidance is for examples only, guidance isn't enforceable and cannot alter the scope of compliance.

See attached document for diagrams.

Likes 1	Jeffrey Watkins, N/A, Watkins Jeffrey
Dislikes 0	

Response

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

Answer	No
Document Name	
Comment	

Figure 3 of the Guidelines and Technical Basis section discusses the inclusion of collector system protective elements; however, the NERC defined term “Element” specifically excludes collector systems in accordance with the NERC bulk Electric System Definition Reference Document dated April 2014; see page 21 of 85. http://www.nerc.com/pa/RAPA/BES%20DL/bes_phase2_reference_document_20140325_final_clean.pdf

Reclamation recommends that the Guidelines and Technical Basis document state that it is an example only and is not enforceable, or remove the discussion on collector system protection elements.

If the drafting team intended to include collector system protective elements for zero-defect compliance monitoring and change management, Reclamation recommends the standard be revised to clearly state “PRC-025 collector system” or “PRC-025 collector system relay elements” throughout the standard, including the Applicability Section.

Likes 0	
Dislikes 0	
Response	

Darnez Gresham - Darnez Gresham On Behalf of: Annette Johnston, Berkshire Hathaway Energy - MidAmerican Energy Co., 1, 3; - Darnez Gresham

Answer	No
Document Name	
Comment	

There is a discussion in the Technical Guidance section that discusses the inclusion of collector system protective elements. However, Table 1 uses the NERC capitalized term “Element” which specifically excludes collector systems via NERC and industry agreement in 2014.

Likes 0	
Dislikes 0	
Response	

George Brown - Acciona Energy North America - 5

Answer	Yes
Document Name	

Comment	
It is an improvement and adds additional clarity.	
Likes 0	
Dislikes 0	
Response	
Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Fischette - Michael Fischette - 3	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 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	
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	

Karie Barczak - DTE Energy - Detroit Edison Company - 3,4,5, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
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	
Laura Nelson - IDACORP - Idaho Power Company - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Eleanor Ewry - Puget Sound Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Lock - Talen Generation, LLC - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
David Ramkalawan - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Normande Bouffard - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Sergio Banuelos - Tri-State G and T Association, Inc. - 1,3,5 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruth Miller - Exelon - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alyssa Hubbard - SCANA - South Carolina Electric and Gas Co. - 5	
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	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
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 Con-Edison	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Douglas Webb - Douglas Webb On Behalf of: Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jessica Tucker, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jim Flucke, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; - Douglas Webb	
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	
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	
Ann Ivanc - FirstEnergy - FirstEnergy Solutions - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Theresa Rakowsky - Puget Sound Energy, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

4. Do you agree that the proposed revisions in Table 1 for Options 14 through 16 address cases where generating facilities are remote to the transmission network by allowing setting criteria based on the simulation of field forcing in response to a 0.85 per unit voltage at the remote end of the line? If not, please explain why and provide an alternative proposal.

Theresa Rakowsky - Puget Sound Energy, Inc. - 1	
Answer	No
Document Name	
Comment	
While it is not typical for a generator to be rated higher than the line connecting the GSU to the transmission system, PSE has concerns with setting the relays for the line based on the generator ratings. Protective relays should be set according to the equipment that they are intended to protect (i.e. line relays should be set to protect the line, transformer relays should be set to protect the transformer, and generator relays should be set to protect the generator). Setting a line relay to protect a generator, particularly when the line might be rated lower than the generator could result in damage to the line, and could potentially result in reduced reliability.	
Likes 0	
Dislikes 0	
Response	

Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
No because if you have multiple radial lines exporting the power from a generator, each line may not have the capability of carry the full power output of the generator. Engineers should have the ability to study individual installations and set the protection correctly for the equipment installed.	
Likes 0	
Dislikes 0	
Response	

Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	No
Document Name	
Comment	

Entities that performed calculations per NERC guidance and (where necessary) making changes under PRC-025-1 should be "grandfathered" for PRC-025-2.

Likes 0	
Dislikes 0	

Response

Sergio Banuelos - Tri-State G and T Association, Inc. - 1,3,5 - MRO,WECC

Answer	No
Document Name	

Comment

Tri-State would like clarification on the phrase "and on the remote end of the line" used in the Relay Type column of Option 14. Looking at the red-lined language under "Figure 1" of the guidelines section, our understanding is that relay R3 is applicable only if it is set with an element directional toward the transmission system or is non-directional. If relay R3 is set directed toward the generator, it is not applicable. If that is the case we recommend splitting up the language between the 2 scenarios and adding a figure to make it clear. As it is currently written, it isn't clear that only the 1st of those scenarios is displayed in Figure 1.

Likes 0	
Dislikes 0	

Response

Donald Lock - Talen Generation, LLC - 5

Answer	No
Document Name	

Comment

Entities that took NERC at their word in performing calculations and (where necessary) making changes under PRC-025-1 should be “grandfathered” for PRC-025-2.

Likes 0	
Dislikes 0	

Response

Eleanor Ewry - Puget Sound Energy, Inc. - 5	
Answer	No
Document Name	
Comment	

While it is not typical for a generator to be rated higher than the line connecting the GSU to the transmission system, PSE has concerns with setting the relays for the line based on the generator ratings. Protective relays should be set according to the equipment that they are intended to protect (i.e. line relays should be set to protect the line, transformer relays should be set to protect the transformer, and generator relays should be set to protect the generator). Setting a line relay to protect a generator, particularly when the line might be rated lower than the generator could result in damage to the line, and could potentially result in reduced reliability.

Likes 0	
Dislikes 0	
Response	

Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	Yes
Document Name	
Comment	

This sentence is confusing: “Simulated line voltage coincident with the highest Reactive Power

output achieved during field -forcing in response to a 0.85 per unit of the line nominal voltage at the remote end of the line prior to field -forcing”

Consider changing to: “Simulated line voltage at the relay location coincident with the highest Reactive Power output achieved during field -fo response to a 0.85 per unit of the line nominal voltage at the remote end of the line prior to field -forcing”???

Likes 0	
Dislikes 0	
Response	

Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Darnez Gresham - Darnez Gresham On Behalf of: Annette Johnston, Berkshire Hathaway Energy - MidAmerican Energy Co., 1, 3; - Darnez Gresham	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ann Ivanc - FirstEnergy - FirstEnergy Solutions - 6	
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	
Richard Jackson - U.S. Bureau of Reclamation - 1	
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	

Russel Mountjoy - Midwest Reliability Organization - 10, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Douglas Webb - Douglas Webb On Behalf of: Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jessica Tucker, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jim Flucke, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; - Douglas Webb	
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 Con-Edison	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3	
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	
Alyssa Hubbard - SCANA - South Carolina Electric and Gas Co. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruth Miller - Exelon - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
George Brown - Acciona Energy North America - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
David Ramkalawan - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
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	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
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	
Karie Barczak - DTE Energy - Detroit Edison Company - 3,4,5, Group Name DTE Energy - DTE Electric	
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	
Julie Hall - Entergy - 6, Group Name Entergy/NERC Compliance	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Fischette - Michael Fischette - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Normande Bouffard - Hydro-Qu?bec Production - 5	
Answer	
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	

5. Do you agree with the removal of the leading term “Pickup” in “Pickup Setting Criteria” in Table 1? If not, please explain why and provide an alternative proposal.

Karie Barczak - DTE Energy - Detroit Edison Company - 3,4,5, Group Name DTE Energy - DTE Electric

Answer	No
Document Name	

Comment

The term “pickup” clearly indicates what part of the overcurrent device setting needs to meet the criteria. Perhaps this term can be retained for current operated devices.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

“Pickup” setting indicates the minimum operating value. Please retain the leading term “Pickup”.

Likes 0	
Dislikes 0	

Response

Russel Mountjoy - Midwest Reliability Organization - 10, Group Name MRO NSRF

Answer	No
Document Name	

Comment

The applicability section states that PRC-025 applies to relays. Removing “Pickup” suggests the drating team is looking for additional protective elements in addition to relays. If the SDT plans to consider more than PRC-025 protective relays, the applicability criteria needs to be adjusted in

addition to removing “Pickup”. Relays or what is meant by relay for PRC-025 needs to be clearly defined so compliance can clearly identify when compliance has been met.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

If Pickup is not removed:

Reclamation recommends the SDT provide clarifying language describing what removing “Pickup” means. Pickup for PRC-025 refers to “PRC-025 Relays,” meaning actual relays at the individual generators with pickup settings. This does not include 1) any individual generator control systems, 2) collector system protective relays that may be installed on the padmount transformers, or 3) collector system protective relays on the radial collectors at the collector substation.

If Pickup is removed:

Reclamation recommends the SDT decide what protective relays are to be included and explicitly specify them. The applicability section states that PRC-025 applies to relays. Removing “Pickup” suggests the drafting team is looking for protective elements in addition to relays. If the SDT intends to include more than PRC-025 protective relays, the applicability criteria must be adjusted in addition to removing “Pickup.”

Reclamation recommends the PRC-025 Applicability section should specifically reference 1) individual generator control systems that may trip the individual power producing resource, 2) collector system protective relays that may be installed on the padmount transformers, or 3) collector system protective relays on the radial collectors at the collector substation.

Likes 0	
Dislikes 0	

Response

Darnez Gresham - Darnez Gresham On Behalf of: Annette Johnston, Berkshire Hathaway Energy - MidAmerican Energy Co., 1, 3; - Darnez Gresham

Answer	No
Document Name	

Comment

The applicability section states that PRC-025 applies to relays. Removing “Pickup” suggests the drating team is looking for additional protective elements in addition to relays. If the SDT plans to consider more than PRC-025 protective relays, the applicability criteria needs to be adjusted in addition to removing “Pickup”. Relays or what is meant by relay for PRC-025 needs to be clearly defined so compliance can clearly identify when compliance has been met.

Likes 0	
Dislikes 0	

Response

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer	No
Document Name	

Comment

The setting that has to be met per the standard is the pickup setting, the standard does not talk about timing, just pickup, so why remove pickup from the table.

Likes 0	
Dislikes 0	

Response

Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro

Answer	Yes
Document Name	

Comment

It would provide added clarity to include “non-directional” in front of “phase instantaneous overcurrent supervising elements (e.g. 50)” and “phase time overcurrent relay (e.g. 51)”.

Likes 0	
Dislikes 0	

Response

Ruth Miller - Exelon - 5

Answer	Yes
Document Name	
Comment	
See comments provided in the response to Question 2 above.	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Fischette - Michael Fischette - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 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	
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	
Leonard Kula - Independent Electricity System Operator - 2	
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	
Laura Nelson - IDACORP - Idaho Power Company - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Eleanor Ewry - Puget Sound Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Lock - Talen Generation, LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
David Ramkalawan - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Normande Bouffard - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sergio Banuelos - Tri-State G and T Association, Inc. - 1,3,5 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
George Brown - Acciona Energy North America - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Alyssa Hubbard - SCANA - South Carolina Electric and Gas Co. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3	
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 Con-Edison	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Douglas Webb - Douglas Webb On Behalf of: Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jessica Tucker, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jim Flucke, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; - Douglas Webb	
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	
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	
Ann Ivanc - FirstEnergy - FirstEnergy Solutions - 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	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Theresa Rakowsky - Puget Sound Energy, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Texas RE noticed the term “Overcurrent Element Pick-up Tolerance” still exists in Attachment 1 Figure A. Is this the SDT’s intention?	
Likes 0	
Dislikes 0	

Response

6. Do you agree with the miscellaneous revisions made to the PRC-025-2 – Application Guidelines? If not, please explain why and provide an alternative proposal.	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
I do not agree with application of this standard. Protection should be set up and coordinated for individual installs not by generitc percentages above MVA nameplates. Setting criteria should not be enforced by NERC unless NERC is willing to take responsibility for any equipment damage from settings being set to high.	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Theresa Rakowsky - Puget Sound Energy, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
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	
Darnez Gresham - Darnez Gresham On Behalf of: Annette Johnston, Berkshire Hathaway Energy - MidAmerican Energy Co., 1, 3; - Darnez Gresham	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Ann Ivanc - FirstEnergy - FirstEnergy Solutions - 6	
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	
Richard Jackson - U.S. Bureau of Reclamation - 1	
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	
Russel Mountjoy - Midwest Reliability Organization - 10, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Douglas Webb - Douglas Webb On Behalf of: Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jessica Tucker, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jim Flucke, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; - Douglas Webb	
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 Con-Edison	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
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	

Alyssa Hubbard - SCANA - South Carolina Electric and Gas Co. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruth Miller - Exelon - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
George Brown - Acciona Energy North America - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sergio Banuelos - Tri-State G and T Association, Inc. - 1,3,5 - MRO,WECC	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Normande Bouffard - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
David Ramkalawan - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Donald Lock - Talen Generation, LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Eleanor Ewry - Puget Sound Energy, Inc. - 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	
Stephanie Burns - Stephanie Burns On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Stephanie Burns	
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	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Karie Barczak - DTE Energy - Detroit Edison Company - 3,4,5, Group Name DTE Energy - DTE Electric	
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	
Julie Hall - Entergy - 6, Group Name Entergy/NERC Compliance	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Fischette - Michael Fischette - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

7. Do you agree with implementation period of (1) 12 months for cases with equipment removal or replacement is not necessary, and (2) 36 months where equipment removal or replacement is necessary based on the considerations listed in the Implementation Plan? If not, please provide a justification for increasing or decreasing the proposed implementation periods.

Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	No
Document Name	
Comment	
The 36 months may not be long enough to replace the relays depending on the number of relays that have been identified for replacement. Suggest a change to 60 months, or “prorated” (The implementation period will be different based on the number of protection units that have been identified for replacement).	
Likes 1	PSEG - PSEG Fossil LLC, 5, Kucey Tim
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	No
Document Name	
Comment	
This does not allow for time needed to make any changes based on the new revision. Altering the calculations and re-reviewing current changes that have been made in accordance with PRC-025-1 will take time. Any non-compliant relays found due to the new revision may cause a delay in our ability to comply. We would request that more time be given to allow for proper implemenation of this new revision.	
Likes 2	PSEG - PSEG Fossil LLC, 5, Kucey Tim; PSEG - Public Service Electric and Gas Co., 1, Smith Joseph
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	No
Document Name	
Comment	

Depending on the date that version 2 would eventually be approved, it is possible that that the version 2 enforcement date, for those assets explicitly in scope under version 1, could actually be earlier than the existing version 1 enforcement date. AEP recommends that the version 2 enforcement date should have the exact same enforcement date as in version 1 for those assets already explicitly in scope under version 1. As an example, the table below shows what would happen if the effective date for version 2 of PRC-025 were to be June 1 of 2018. As shown in the table provided, the version two enforcement dates for assets already explicitly in scope under version one, both for assets where no removal or replacement is necessary *and* for assets requiring removal or replacement, would be sooner that their corresponding enforecement dates under version one.

Requirement	**Effective Date**	**Enforcement Date**
PRC-025-1 R1 (No removal or replacement necessary)	10/01/14	10/01/19
PRC-025-**2** R1 Assets Already Explictly in Scope (No removal or replacement necessary)	06/01/18	06/01/19
PRC-025-1 R1 (Requires removal or replacement)	10/01/14	10/01/21
PRC-025-**2** R1 Assets Already Explictly in Scope (Requires removal or replacement)	06/01/18	05/31/21

AEP has chosen to vote negative on the proposed draft of PRC-025-2, driven by our concerns related to the proposed implementation plan.

Likes 2	PSEG - PSEG Fossil LLC, 5, Kucey Tim; PSEG - Public Service Electric and Gas Co., 1, Smith Joseph
Dislikes 0	

Response

Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
The Implementation Plan should not require taking a special outage for PRC-025, and should therefore allow at least five years to make relay settings changes, and seven years to install new devices.	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
The Implementation Period should align with the existing Implementation Period of PRC-025-1 because that is what utilities have been working toward.	
Likes 1	PSEG - PSEG Fossil LLC, 5, Kucey Tim
Dislikes 0	
Response	
Sergio Banuelos - Tri-State G and T Association, Inc. - 1,3,5 - MRO,WECC	
Answer	No
Document Name	
Comment	
As currently written, it appears the implementation plan can actually shorten the current timeframes to become compliant with PRC-025. If PRC-025-2 was approved and became effective prior to 10/1/18, entities would have less time to comply with the 2 scenarios under "Load-responsive protective relays subject to the standard" in the implementation plans. Currently entities have until 10/1/19 to comply when they will be making a setting change to meet the setting criteria and 10/1/21 to comply when they will be removing/replacing the relay to meet the setting criteria. Tri-State recommends adding	

language similar to the commonly used "shall become effective on the later of XXXX or the first day of the XX calendar quarter". That would prevent entities from losing time they might have already planned on having to become complaint with PRC-025-1.

Additionally, can the SDT explain why they changed the timeframes (from 60 and 84 months to 12 and 36 months respectively) under "Load-responsive protective relays subject to the standard" but not the ones under "Load-responsive protective relays which become applicable to the standard" provided in the implementation plans.

Likes 1	PSEG - PSEG Fossil LLC, 5, Kucey Tim
Dislikes 0	

Response

Alyssa Hubbard - SCANA - South Carolina Electric and Gas Co. - 5

Answer	No
Document Name	

Comment

Implementation Period should align with the existing Implementation Period of PRC-025-1 because that is what utilities have been working toward.

Likes 0	
Dislikes 0	

Response

Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6

Answer	No
Document Name	

Comment

The Implementation Plan should not require taking a special outage for PRC-025, and should therefore allow at least five years to make relay settings changes, and seven years to install new devices.

Likes 0	
Dislikes 0	

Response

M Lee Thomas - Tennessee Valley Authority - 5, Group Name Tennessee Valley Authority

Answer	No
Document Name	
Comment	
TVA does not agree that a 12-month implementation period is sufficient for changes to relay settings that now may be required due to the new applicability of the 50 (instantaneous overcurrent) element in PRC-025-2 Draft 1. The original PRC-025-1 implementation plan allowed 5 years from approval to implement settings changes. This 5-year period was sufficient for implementing new relay settings, even for nuclear units which are tied to refueling outage schedules. TVA has seven nuclear units. Some other entities have even more. It is unreasonable to expect nuclear units to schedule additional outages that could be required within the proposed 1-year implementation period, just to perform relay settings changes.	
Likes 2	PSEG - PSEG Fossil LLC, 5, Kucey Tim; PSEG - Public Service Electric and Gas Co., 1, Smith Joseph
Dislikes 0	
Response	
Russel Mountjoy - Midwest Reliability Organization - 10, Group Name MRO NSRF	
Answer	No
Document Name	
Comment	
The SDT was not clear with its first implementation that collector systems were in scope as Technical Guidance cannot alter the scope of compliance and the applicability section 4.2.5 by itself did not make it clear that non-BES collector systems were being included contrary to the NERC Bulk Electric System Definition Reference Document dated April of 2014. Entities need another 60 months to staff and build systems of record supporting zero defect compliance monitoring and change management on non-BES collector systems.	
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 current standard’s implementation plan states that the entity must be compliant by October 2019, or by October 2021 for the removal or replacement of applicable relays. The proposed implementation plan only identifies the retirement of the previous standard and does not provide a	

transition period between revisions. We propose incorporating a clause that begins the compliance period no earlier than October 2019, and no earlier than October 2021 for the removal or replacement of applicable relays.	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Unless the SDT clarifies that the PRC-025 applicability section refers only to PRC-025 relays on 1) substation Bulk Electric System (BES) elements and 2) individual power producing resource relays at the BES generators, and that all collector system protective relays are excluded, the first implementation of PRC-025-1 was not clear and entities will need 60 months to staff and build systems to support zero-defect compliance monitoring and change management.	
Likes 0	
Dislikes 0	
Response	
Ann Ivanc - FirstEnergy - FirstEnergy Solutions - 6	
Answer	No
Document Name	
Comment	
It would be beneficial for maintenance requirement to align with PRC-005 maintenance requirement since time between scheduled outages for generation units can be as long as 36 months.	
Likes 0	
Dislikes 0	
Response	
Darnez Gresham - Darnez Gresham On Behalf of: Annette Johnston, Berkshire Hathaway Energy - MidAmerican Energy Co., 1, 3; - Darnez Gresham	

Answer	No
Document Name	
Comment	
The SDT was not clear with its first implementation that collector systems were in scope as Technical Guidance cannot alter the scope of compliance and the applicability section 4.2.5 by itself did not make it clear that non-BES collector systems were being included contrary to the NERC Bulk Electric System Definition Reference Document dated April of 2014. Entities need another 60 months to staff and build systems of record supporting zero defect compliance monitoring and change management on non-BES collector systems.	
Likes 0	
Dislikes 0	
Response	
Karie Barczak - DTE Energy - Detroit Edison Company - 3,4,5, Group Name DTE Energy - DTE Electric	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
David Ramkalawan - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
OPG recommends changing the implementation plan since there is no correlation between the number of the relays requiring replacement and the arbitrary implementation period. We suggest the implementation period to be a function of the number of relays involved. Alternate graded approach is also possible i.e. 25, 50, 75 & 100% corresponding to 5 years.	
Likes 0	
Dislikes 0	
Response	

Michael Fischette - Michael Fischette - 3	
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	
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	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
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	
Laura Nelson - IDACORP - Idaho Power Company - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Eleanor Ewry - Puget Sound Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Normande Bouffard - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
George Brown - Acciona Energy North America - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Ruth Miller - Exelon - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3	
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 Con-Edison	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Douglas Webb - Douglas Webb On Behalf of: Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jessica Tucker, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jim Flucke, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; - Douglas Webb	

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	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
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	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Theresa Rakowsky - Puget Sound Energy, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
The proposed Implementation Plan is consistent with the timelines for compliance with PRC-025-1. Texas RE suggests the SDT clarifies that entities making a determination that replacement or removal is necessary, triggering the 36-month compliance window, should document those conclusions.	
Likes 0	
Dislikes 0	
Response	

8. Do you agree with the Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) for the requirement in the proposed PRC-025-2? If not, please identify the need here.

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer	No
Document Name	

Comment

Stating that this is a severe VSL and high VRF is way more severe than the actual risk for not being in compliance with PRC-025-2 especially for asynchronous generators. If the settings and studies are done correctly there is no risk of false tripping even if the pickups are not as high as the requirements in this standard.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Reclamation recommends there is a need for high/moderate/low VSLs based on the number of relays impacted by the standard. Reclamation recommends a VSL similar to that for PRC-005-6 R3 and R4. Reclamation recommends the following VSLs:

Requirement Number - R1

Lower VSL - The entity failed to apply settings in accordance with PRC-025-2 Attachment 1: Relay Settings, on fewer than 5% of its load-responsive protective relays.

Moderate VSL - The entity failed to apply settings in accordance with PRC-025-2 Attachment 1: Relay Settings, on 5% to less than 10% of its load-responsive protective relays.

High VSL - The entity failed to apply settings in accordance with PRC-025-2 Attachment 1: Relay Settings, on 10% to less than 15% of its load-responsive protective relays.

Severe VSL - The entity failed to apply settings in accordance with PRC-025-2 Attachment 1: Relay Settings, on 15% or more of its load-responsive protective relays.

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

We believe a performance-based criteria could be established for the Violation Severity Levels for this standard, similar to what is present for NERC Reliability Standard PRC-005-6. In that standard, the severity is based on a specific percentage of Components the applicable entity failed to maintain in accordance with minimum maintenance activities and maximum maintenance intervals. We recommend using the same criteria for this standard.

Likes 0	
Dislikes 0	

Response

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

Answer	Yes
Document Name	

Comment

Likes 0	
Dislikes 0	

Response

Theresa Rakowsky - Puget Sound Energy, Inc. - 1

Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
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	
Darnez Gresham - Darnez Gresham On Behalf of: Annette Johnston, Berkshire Hathaway Energy - MidAmerican Energy Co., 1, 3; - Darnez Gresham	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Ann Ivanc - FirstEnergy - FirstEnergy Solutions - 6	
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	
Russel Mountjoy - Midwest Reliability Organization - 10, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Douglas Webb - Douglas Webb On Behalf of: Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jessica Tucker, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jim Flucke, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; - Douglas Webb	
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 Con-Edison	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alyssa Hubbard - SCANA - South Carolina Electric and Gas Co. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruth Miller - Exelon - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
George Brown - Acciona Energy North America - 5	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Sergio Banuelos - Tri-State G and T Association, Inc. - 1,3,5 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Normande Bouffard - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
David Ramkalawan - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Lock - Talen Generation, LLC - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Eleanor Ewry - Puget Sound Energy, Inc. - 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	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Karie Barczak - DTE Energy - Detroit Edison Company - 3,4,5, Group Name DTE Energy - DTE Electric	
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	
Julie Hall - Entergy - 6, Group Name Entergy/NERC Compliance	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Fischette - Michael Fischette - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Texas RE recommends changing the “and” to an “or”. Additionally, Texas RE requests the SDT consider providing a justification of the “Long Term Planning” time horizon as it has a significant impact on Penalty calculations.	
Likes 0	
Dislikes 0	
Response	

9. Do the revisions proposed in PRC-025 provide a cost effective solution to the issues? For example, the revisions (i.e., Options 14b, 15b, and 16b) addressing remote weak generating plants in comparison to a strong transmission system and using the resource capability curve (i.e., Option 5b) to demonstrate loadability over the current 130 percent setting criteria? If not, please identify other cost effective alternatives of the issues addressed in the project.

Julie Hall - Entergy - 6, Group Name Entergy/NERC Compliance	
Answer	No
Document Name	
Comment	
These options, and other options, which use the phrase “gross MW reported to the Transmission Planner” needs clarity. That values are reported to the Transmission Planner annually. These values change somewhat, annually. Should Transmission Owners re-evalute that data and the settings derived from that data annually? I believe the spirit of PRC-025 is met with a one-time implmenetation based on this generator data. There should be no burden on Transmission Owners to re-evaluate this geneator data every year and re-calculate setitngs every year. Even if the Transmission Owner chooses to calculate settings on data more conservative than what is reported to the Transmission Planner, there should not be a requirement against annually chaning data.	
Likes 0	
Dislikes 0	
Response	
Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
Entities that took NERC at their word in performing calculations and (where necessary) making changes under PRC-025-1 should be “grandfathered” for PRC-025-2.	
Likes 0	
Dislikes 0	
Response	
Ruth Miller - Exelon - 5	
Answer	No

Document Name	
Comment	
See comments and alternative approaches to meet the intent of the Standard in response to Question 2 above.	
Likes 0	
Dislikes 0	
Response	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	No
Document Name	
Comment	
Entities that performed calculations per NERC guidance and (where necessary) making changes under PRC-025-1 should be "grandfathered" for PRC-025-2.r	
Likes 0	
Dislikes 0	
Response	
Russel Mountjoy - Midwest Reliability Organization - 10, Group Name MRO NSRF	
Answer	No
Document Name	
Comment	
Not as proposed. Cost efficiency can be achieved by focusing on the right impactful objectives. Focus on common-mode design issues and exclude zero defect compliance monitoring / change management for individual collector systems or individual dispersed power producing resources. The NSRF suggests the SDT modify the applicability section to concentrate of common-mode design issues affecting 75 MVA or more of aggregated dispersed power resource generators. Zero defect compliance monitoring and change management for collector systems and individual generators should be clearly excluded similar to PRC-005-6. This appropriately focuses compliance efforts on the measurable impacts of common mode design issues and reduces the administrative burden of explicitly tracking and monitoring individual dispersed power producing resources.	
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	
We believe the standard is too inclusive of all load-responsive protective relays. The applicability of this standard should be reflective of other PRC Standards, such as NERC Reliability Standard PRC-019-2, and based on the BES definition and gross nameplate ratings of generation Facilities.	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Cost efficiency would be achieved by focusing on the correct impactful objectives, such as common-mode design issues, while excluding zero-defect compliance monitoring/change management for individual collector systems or individual dispersed power producing resources. For example, without an outside source to provide internal capability curves, Option 5 may be extremely labor intensive to develop and maintain to zero-defect. Zero-defect compliance monitoring and change management for collector systems and individual generators should be clearly excluded similar to PRC-005-6. Reclamation recommends the SDT modify the applicability section to concentrate on common-mode design issues affecting 75 MVA or more of aggregated dispersed power resource generators. This appropriately focuses compliance efforts on the measurable impacts of common-mode design issues and reduces the administrative burden of explicitly tracking and monitoring individual dispersed power producing resources.	
Likes 0	
Dislikes 0	
Response	

Darnez Gresham - Darnez Gresham On Behalf of: Annette Johnston, Berkshire Hathaway Energy - MidAmerican Energy Co., 1, 3; - Darnez Gresham	
Answer	No
Document Name	
Comment	
Not as proposed. Cost efficiency can be achieved by focusing on the right impactful objectives. Focus on common-mode design issues and exclude zero defect compliance monitoring / change management for individual collector systems or individual dispersed power producing resources. The NSRF suggests the SDT modify the applicability section to concentrate of common-mode design issues affecting 75 MVA or more of aggregated dispersed power resource generators. Zero defect compliance monitoring and change management for collector systems and individual generators should be clearly excluded similar to PRC-005-6. This appropriately focuses compliance efforts on the measurable impacts of common mode design issues and reduces the administrative burden of explicitly tracking and monitoring individual dispersed power producing resources.	
Likes 0	
Dislikes 0	
Response	
Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Michael Fischette - Michael Fischette - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Colby Bellville - Duke Energy - 1,3,5,6 - FRCC,SERC,RF, Group Name Duke Energy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Karie Barczak - DTE Energy - Detroit Edison Company - 3,4,5, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
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	
Eleanor Ewry - Puget Sound Energy, Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
David Ramkalawan - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sergio Banuelos - Tri-State G and T Association, Inc. - 1,3,5 - MRO,WECC	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
George Brown - Acciona Energy North America - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alyssa Hubbard - SCANA - South Carolina Electric and Gas Co. - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3	
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 Con-Edison	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Douglas Webb - Douglas Webb On Behalf of: Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jessica Tucker, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jim Flucke, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; - Douglas Webb	
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	

Ann Ivanc - FirstEnergy - FirstEnergy Solutions - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
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	
Russell Noble - Cowlitz County PUD - 3	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Theresa Rakowsky - Puget Sound Energy, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Normande Bouffard - Hydro-Qu?bec Production - 5	
Answer	
Document Name	
Comment	

N/A	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Texas RE does not have comments on this question.	
Likes 0	
Dislikes 0	
Response	

10. Are you aware of any conflicts between the proposed standard revisions and any regulatory function, rule, order, tariff, rate schedule, legislative requirement, or agreement? If yes, please identify the conflict here.

Darnez Gresham - Darnez Gresham On Behalf of: Annette Johnston, Berkshire Hathaway Energy - MidAmerican Energy Co., 1, 3; - Darnez Gresham

Answer	No
Document Name	

Comment

No, but the SDT should check to see if the inclusion of collectors sytem(s) could infringe on state jurisdictions.

Likes 0	
Dislikes 0	

Response

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

Answer	No
Document Name	

Comment

Reclamation recommends that the SDT check to see if the inclusion of collector systems could infringe on state jurisdictions.

Likes 0	
Dislikes 0	

Response

Russel Mountjoy - Midwest Reliability Organization - 10, Group Name MRO NSRF

Answer	No
Document Name	

Comment

No, but the SDT should check to see if the inclusion of collectors sytem(s) could infringe on state jurisdictions.

Likes 0	

Dislikes 0	
Response	
Normande Bouffard - Hydro-Qu?bec Production - 5	
Answer	No
Document Name	
Comment	
No from a technical point of view, but there might be some regional variances with the version approved by the Regie de l'Énergie du Québec.	
Likes 0	
Dislikes 0	
Response	
Laurie Williams - PNM Resources - Public Service Company of New Mexico - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Theresa Rakowsky - Puget Sound Energy, Inc. - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Russell Noble - Cowlitz County PUD - 3	
Answer	No
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	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ann Ivanc - FirstEnergy - FirstEnergy Solutions - 6	
Answer	No

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	No
Document Name	
Comment	
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	
Likes 0	
Dislikes 0	
Response	
Douglas Webb - Douglas Webb On Behalf of: Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jessica Tucker, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jim Flucke, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; - Douglas Webb	
Answer	No
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 Con-Edison	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alyssa Hubbard - SCANA - South Carolina Electric and Gas Co. - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruth Miller - Exelon - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
George Brown - Acciona Energy North America - 5	

Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sergio Banuelos - Tri-State G and T Association, Inc. - 1,3,5 - MRO,WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
David Ramkalawan - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Eleanor Ewry - Puget Sound Energy, Inc. - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Laura Nelson - IDACORP - Idaho Power Company - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Karie Barczak - DTE Energy - Detroit Edison Company - 3,4,5, Group Name DTE Energy - DTE Electric	

Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Colby Bellville - Duke Energy - 1,3,5,6 - FRCC,SERC,RF, Group Name Duke Energy	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy/NERC Compliance	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	No
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Michael Fischette - Michael Fischette - 3	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response

11. Are you aware of a need for a regional variance or business practice that should be considered with this project? If yes, please identify the need here.	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	No
Document Name	
Comment	
Texas RE requests this question be included for each project.	
Likes 0	
Dislikes 0	
Response	
Mike Smith - Manitoba Hydro - 1, Group Name Manitoba Hydro	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Thomas Foltz - AEP - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy/NERC Compliance	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Colby Bellville - Duke Energy - 1,3,5,6 - FRCC,SERC,RF, Group Name Duke Energy	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Karie Barczak - DTE Energy - Detroit Edison Company - 3,4,5, Group Name DTE Energy - DTE Electric	
Answer	No

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Neil Swearingen - Salt River Project - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Aaron Cavanaugh - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laura Nelson - IDACORP - Idaho Power Company - 1	
Answer	No
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Eleanor Ewry - Puget Sound Energy, Inc. - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Elizabeth Axson - Electric Reliability Council of Texas, Inc. - 2	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donald Lock - Talen Generation, LLC - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

David Ramkalawan - Ontario Power Generation Inc. - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
RoLynda Shumpert - SCANA - South Carolina Electric and Gas Co. - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sergio Banuelos - Tri-State G and T Association, Inc. - 1,3,5 - MRO,WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
George Brown - Acciona Energy North America - 5	
Answer	No

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ruth Miller - Exelon - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alyssa Hubbard - SCANA - South Carolina Electric and Gas Co. - 5	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Hohenshilt - Talen Energy Marketing, LLC - 6	
Answer	No
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3	
Answer	No
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 Con-Edison	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Douglas Webb - Douglas Webb On Behalf of: Harold Wyble, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; James McBee, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jessica Tucker, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; Jim Flucke, Great Plains Energy - Kansas City Power and Light Co., 3, 5, 1, 6; - Douglas Webb	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Russel Mountjoy - Midwest Reliability Organization - 10, Group Name MRO NSRF	
Answer	No
Document Name	
Comment	
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	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
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	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Darnez Gresham - Darnez Gresham On Behalf of: Annette Johnston, Berkshire Hathaway Energy - MidAmerican Energy Co., 1, 3; - Darnez Gresham	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	No
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	No
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Russell Noble - Cowlitz County PUD - 3	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Theresa Rakowsky - Puget Sound Energy, Inc. - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Normande Bouffard - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Hydro-Québec TransÉnergie has proposed calculations and simulations for a particular configuration.	

Likes 0	
Dislikes 0	
Response	
Ann Ivanc - FirstEnergy - FirstEnergy Solutions - 6	
Answer	Yes
Document Name	
Comment	
It would be beneficial for maintenance requirement to align with PRC-005 maintenance requirement since time between scheduled outages for generation units can be as long as 36 months.	
Likes 0	
Dislikes 0	
Response	

12. If you have any other comments on this Standard that you haven't already mentioned above, please provide them here:

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

Answer	
Document Name	

Comment

I was not able to log my vote in SBS despite being in the ballot pool and attempting to vote affirmative before the ballot close time. Please contact me to ensure this issue is remedied.

Likes 0	
Dislikes 0	

Response

Russell Noble - Cowlitz County PUD - 3

Answer	
Document Name	

Comment

Applicability Section 4.1 references "3.2, Facilities." This appears to be a typographical error; consider correcting to reference "4.2 Facilities.

Likes 0	
Dislikes 0	

Response

Jamie Monette - Allete - Minnesota Power, Inc. - 1

Answer	
Document Name	

Comment

All settings should be based off load ability and equipment ratings like option 5b allows. Setting elements to arbitrary values called out in PRC-025 is not good sound engineering and poor practice for protecting electrical equipment. Settings should be based on IEEE standards and studies preformed by the professional licensed engineer developing the settings.

Likes 0	
Dislikes 0	
Response	
Darnez Gresham - Darnez Gresham On Behalf of: Annette Johnston, Berkshire Hathaway Energy - MidAmerican Energy Co., 1, 3; - Darnez Gresham	
Answer	
Document Name	
Comment	

Member entities, regulators, and regional entities need to have the same pictures and concepts so that potential staff and cost effectiveness discussions can be considered. Consider the following individual dispersed power producing resource picture discussed at the PRC-025 SDT.

For clarity, consider comparing impacts in terms of PRC-025 devices to PRC-005 devices. Discuss PRC-025 “protective elements” or devices (which can be more than relays) expected by the PRC-025 drafting team.

As an example, a GE wind turbine can have two nacelle breakers / relays and a molded case breaker /relay at the base of the wind tower, creating three “protective elements” or devices per wind turbine. Each wind turbine has a 690 / 34,500 volt padmount transformer with a low-side and high-side fuse potentially creating three more “protective elements” or devices per padmount if included in the PRC-025 protective element definition. Each radial collector can handle approximately 20 - 30 MVA and typically has 10 – 15 turbines per single radial collector breaker. All of these items (and potentially more, given the “smart crowbar” example from the recent NERC lessons learned) would have to be tracked for zero defects, such as perfect settings, coordinated, and perfect knowledge of changes.

Extrapolating the above example for approximately 3,000 wind turbines you could easily have a PRC-025 program that quickly surpasses the workload of a PRC-005-6 program:

1. Wind turbine protective elements (breakers CB1, CB2, and CB3 per turbine) = 3*3,000 turbines = 9,000 protective elements to track and coordinate.
2. Other wind turbine protective elements such as smart crowbars = 1 smart crowbar * 3,000 turbines = 3,000 protective elements to track and coordinate.
3. Each wind turbine has a padmount transformer that may need to be tracked and coordinated = 3,000 padmount transformers to track and coordinate.
4. Padmount protective elements such as fuses (one high-side and one low-side) if included in a future protective element definition = 2*3,000 padmount transformers = 6,000 protective elements to track and coordinate.
5. Radial collector breakers = 300 radial collector breakers assuming on average each collector breaker serves approximately 10 MVA of wind generation and coordinate.
6.

In this 3,000 wind turbine example there are 21,300 “protective elements” to track and maintain to zero defect for PRC-025. Exclude the padmount transformer fuses, and the number drops by 6,000 devices to 15,300. Excluding the padmount transformers and fuses drops the number to

12,300 devices to track and coordinate. This doesn't include the substation System Protection devices that we already consider at the substation.

What benefit is derived from zero defect compliance monitoring and change management of individual PRC-025 protective elements versus addressing common mode design issues?

Below are some possible comments on PRC-025 to focus on the important reliability impacts of common-mode design issues versus individual resources or protective elements.

Proposed Solution:

1. Request that the PRC-025 standards drafting team consider the following applicability section changes to differentiate between significant Bulk Electric System (BES) Impacts that risk the loss of 75 MVA or more versus the loss of individual collectors or individual generators.

Replace the proposed Applicability section 3.2.5

3.2.5 Elements utilized in the aggregation of dispersed power producing resources.

With:

3.2.5 Dispersed Power Producing Resource collector system common design mode issues that risk the loss of 75 MVA or more for a single event.

3.2.6 Protection elements used in aggregating dispersed BES generation from the point where those resources aggregate to greater than 75 MVA to a common point of connection at 100kV or above are excluded except for common design mode issues identified for 3.2.5.

2. Request that the PRC-025 standards drafting team consider defining "Protective element" for PRC-025 means, "protective tripping relays, protective tripping padmount relays, or protective generator control system trips designed to limit individual generator damage on the collector system. Protective element excludes fuses.

3. Request that the PRC-025 standards drafting team consider defining a NERC Dispersed Power Producing Resource Collector System such as:

Collector System: Radial facilities used to aggregate dispersed power producing resources designed primarily to deliver such aggregate capacity to a common point of connection at a voltage of 100 kV or above.

4. Request that the PRC-025 standards drafting team consider modifying the existing NERC definition of “Element” and “Facility” to separate plant issues from individual generator issues (thanks to Darnez for this item):

NERC Defined Element: Any electrical device with terminals that may be connected to other electrical devices such as a generator, an individual generator, an individual dispersed power producing resource, transformer, circuit breaker, bus section, or transmission line. An Element may be comprised of one or more components.

NERC Defined Facility: A set of electrical equipment that operates as a single Bulk Electric System Element (e.g., a line, a generator generating plant or aggregate dispersed power producing plant, a shunt compensator, transformer, etc.)

Likes 0	
Dislikes 0	

Response

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

Answer	
Document Name	

Comment

Figure examples should be added to show examples of “elements utilized in the aggregation of dispersed power producing resources” for clarity as the BES definition excludes these elements from the BES.

Likes 0	
Dislikes 0	

Response

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

Answer	
Document Name	

Comment
Reclamation recommends the SDT clarify the definition of Unit Auxiliary Transformer (UAT) in footnote 1 on page 3 of 112 of the standard to state that a Unit Auxiliary Transformer does not include excitation supply power potential transformers. Reclamation recommends the SDT clarify what benefit is derived from zero-defect compliance monitoring and change management of individual PRC-025 protective elements versus addressing common mode design issues. Reclamation recommends the SDT clarify the definition of Unit Auxiliary Transformer (UAT) in footnote 1 on page 3 of 112 of the standard to state that, "a Unit Auxiliary Transformer does not include excitation supply power potential transformers." For clarity, Reclamation recommends the SDT state the PRC-025 "protective elements" or devices (which can be more than relays) expected to be in scope. Reclamation recommends the SDT evaluate the impact of PRC-025 in terms of the number of PRC-025 devices, similar to the impact of PRC-005. All of these items (and potentially more, based on the recent NERC Lesson Learned, "Loss of Wind Turbines due to Transient Voltage Disturbances on the Bulk Transmission System") would have to be tracked for zero defects, such as perfect settings and perfect knowledge of changes. This could result in an entity's PRC-025 program being the same or greater size and workload as its PRC-005-6 program. Following are some possible solutions to help focus on the important reliability impacts of common-mode design issues versus individual resources or protective elements. **Proposed Solutions:** 1. Reclamation recommends that the drafting team consider the following applicability section changes to differentiate between significant Bulk Electric System (BES) Impacts that risk the loss of 75 MVA or more and the loss of individual collectors or individual generators. Reclamation recommends replacing the proposed Applicability section 3.2.5 *3.2.5 Elements utilized in the aggregation of dispersed power producing resources.* with: **3.2.5** Dispersed Power Producing Resource collector system common design mode issues that risk the loss of 75 MVA or more for a single event. **3.2.6** Protection elements used in aggregating dispersed BES generation from the point where those resources aggregate to greater than 75 MVA to a common point of connection at 100kV or above are excluded except for common design mode issues identified in 3.2.5. 2. Reclamation recommends that the drafting team consider defining "protective element" as, "protective tripping relays, protective tripping padmount relays, or protective generator control system trips designed to limit individual generator damage on the collector system." A protective element excludes fuses. 3. Reclamation recommends that the drafting team consider adding a NERC Glossary defined term of "Dispersed Power Producing Resource Collector System" such as: **Collector System:** Radial facilities used to aggregate dispersed power producing resources designed primarily to deliver such aggregate capacity to a common point of connection at a voltage of 100 kV or above. 4. Reclamation recommends that the drafting team consider modifying the existing NERC Glossary definitions of "Element" and "Facility" to separate plant issues from individual generator issues as follows:

Element: Any electrical device with terminals that may be connected to other electrical devices such as *an individual generator, an individual dispersed power producing resource*, transformer, circuit breaker, bus section, or transmission line. An Element may be comprised of one or more components.

Facility: A set of electrical equipment that operates as a single Bulk Electric System Element (e.g., a line, a *generating plant or aggregate dispersed power producing plant*, a shunt compensator, transformer, etc.)

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. Section 4.1 identifies functional entities that are applicable to this standard. These entities apply load-responsive protective relays at the terminal ends of the Elements identified in Section 3.2, Facilities. However, we believe the applicability of these Facilities are listed under Section 4.2. We observe this inconsistency throughout the standard.
2. This project continues to run independent of the current implementation plan identified for NERC Reliability Standard PRC-024-1. Although the phased-in implementation of this standard is still on-going, it very probable that a registered entity has already developed a complete compliance program that addresses the current version of this standard. We simply ask the SDT to acknowledge this possibility.
3. We thank you for this opportunity to provide these comments.

Likes 0	
Dislikes 0	

Response

Russel Mountjoy - Midwest Reliability Organization - 10, Group Name MRO NSRF

Answer	
Document Name	Project 2016-04 PRC-025-2Final.docx

Comment

Member entities, regulators, and regional entities need to have the same pictures and concepts so that potential staff and cost effectiveness discussions can be considered. Consider the following individual dispersed power producing resource picture discussed at the PRC-025 SDT.

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As an example, a GE wind turbine can have two nacelle breakers / relays and a molded case breaker /relay at the base of the wind tower, creating three “protective elements” or devices per wind turbine. Each wind turbine has a 690 / 34,500 volt padmount transformer with a low-side and high-side

fuse potentially creating three more “protective elements” or devices per padmount if included in the PRC-025 protective element definition. Each radial collector can handle approximately 20 - 30 MVA and typically has 10 – 15 turbines per single radial collector breaker. All of these items (and potentially more, given the “smart crowbar” example from the recent NERC lessons learned) would have to be tracked for zero defects, such as perfect settings, coordinated, and perfect knowledge of changes.

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3. Each wind turbine has a padmount transformer that may need to be tracked and coordinated = 3,000 padmount transformers to track and coordinate.

4. Padmount protective elements such as fuses (one high-side and one low-side) if included in a future protective element definition = 2*3,000 padmount transformers = 6,000 protective elements to track and coordinate.

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In this 3,000 wind turbine example there are 21,300 “protective elements” to track and maintain to zero defect for PRC-025. Exclude the padmount transformer fuses, and the number drops by 6,000 devices to 15,300. Excluding the padmount transformers and fuses drops the number to 12,300 devices to track and coordinate. This doesn’t include the substation System Protection devices that we already consider at the substation.

What benefit is derived from zero defect compliance monitoring and change management of individual PRC-025 protective elements versus addressing common mode design issues

Below are some possible comments on PRC-025 to focus on the important reliability impacts of common-mode design issues versus individual resources or protective elements.

Proposed Solution:

1. Request that the PRC-025 standards drafting team consider the following applicability section changes to differentiate between significant Bulk Electric System (BES) Impacts that risk the loss of 75 MVA or more versus the loss of individual collectors or individual generators.

Replace the proposed Applicability section 3.2.5

3.2.5 Elements utilized in the aggregation of dispersed power producing resources

With:

3.2.5 Dispersed Power Producing Resource collector system common design mode issues that risk the loss of 75 MVA or more for a single event.

3.2.6 Protection elements used in aggregating dispersed BES generation from the point where those resources aggregate to greater than 75 MVA to a common point of connection at 100kV or above are excluded except for common design mode issues identified for 3.2.5.

2. Request that the PRC-025 standards drafting team consider defining “Protective element” for PRC-025 means, “protective tripping relays, protective tripping padmount relays, or protective generator control system trips designed to limit individual generator damage on the collector system. Protective element excludes fuses.

3. Request that the PRC-025 standards drafting team consider defining a NERC Dispersed Power Producing Resource Collector System such as:

Collector System: Radial facilities used to aggregate dispersed power producing resources designed primarily to deliver such aggregate capacity to a common point of connection at a voltage of 100 kV or above.

4. Request that the PRC-025 standards drafting team consider modifying the existing NERC definition of “Element” and “Facility” to separate plant issues from individual generator issues (thanks to Darnez for this item):

NERC Defined Element: Any electrical device with terminals that may be connected to other electrical devices such as a generator, an individual generator, an individual dispersed power producing resource, transformer, circuit breaker, bus section, or transmission line. An Element may be comprised of one or more components.

NERC Defined Facility: A set of electrical equipment that operates as a single Bulk Electric System Element (e.g., a line, a generator generating plant or aggregate dispersed power producing plant, a shunt compensator, transformer, etc.)

Please see attached document for diagram.

Likes 0	
Dislikes 0	

Response

M Lee Thomas - Tennessee Valley Authority - 5, Group Name Tennessee Valley Authority

Answer	
Document Name	

Comment

Several times the term “Real Power output” is defined in the proposed standard as “100% of the aggregate generation gross MW capability reported to the Transmission Planner.” TVA believes that it can be difficult to determine what is meant by “capability reported to the transmission planner,” and would like to see the standard clarify on which reporting mechanism or process this generation capability is normally expected to be based. A Transmission Planner can have multiple capabilities reported for one unit. For example, a MOD-025 capability verified by test or operational data, versus a planned capability that reflects a modification to be implemented in the near future.

Likes 0	
Dislikes 0	

Response

Brandon McCormick - Brandon McCormick On Behalf of: Carol Chinn, Florida Municipal Power Agency, 5, 6, 4, 3; Ginny Beigel, City of Vero Beach, 3; Joe McKinney, Florida Municipal Power Agency, 5, 6, 4, 3; Lynne Mila, City of Clewiston, 4; Richard Montgomery, Florida Municipal Power Agency, 5, 6, 4, 3; Tom Reedy, Florida Municipal Power Pool, 6; - Brandon McCormick, Group Name FMPA	
Answer	
Document Name	
Comment	
Table 1 seems to explicity require specific reach settings and does not address how to comply with the standard if using a quad element and not a mho element, even though a quad element is uncommon in generator relays. Additionally, there is not a clear path in the standard regarding load encroachment blocking. Load encroachment blocking is mentioned in the PRC-025-1 Application Guideline and the the NERC SPCS report "Considerations for Power Plant and Transmission System Protection Coordination" but is absent in the standard.	
Likes 0	
Dislikes 0	
Response	
Marc Donaldson - Tacoma Public Utilities (Tacoma, WA) - 3	
Answer	
Document Name	
Comment	
In Table 1, Relay Type column, for Options 14, 15, 16, 17, 18, and 19, consider changing "…installed on the high-side of the GSU transformer and [on the] remote end of the line" to something like "…installed on the high-side of the GSU transformer and/or [on the] remote end of the line" or "…installed on the high-side of the GSU transformer, including [on the] remote end of the line." A simple 'and' suggests that relaying at both locations may be required.	
Likes 0	
Dislikes 0	
Response	
Donald Hargrove - OGE Energy - Oklahoma Gas and Electric Co. - 3	
Answer	
Document Name	
Comment	

The SDT should modify the applicability section to concentrate on common-mode design issues affecting 75 MVA or more of aggregated dispersed power resource generators. Zero defect compliance monitoring and change management for collector systems and individual generators should be clearly excluded as in PRC-005-6.

This appropriately focuses compliance efforts on the measurable impacts of common mode design issues and reduces the administrative burden of explicitly tracking and monitoring individual dispersed power producing resources.

Likes 1	OGE Energy - Oklahoma Gas and Electric Co., 1, Pyle Terri
Dislikes 0	

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10

Answer	
Document Name	

Comment

Texas RE inquires about the use of the Application Guideline as there are several changes in the works with regards to attached documents. Texas RE's understanding is that any guidance as to how to comply with a standard will go through the Implementation Guidance process. Any technical basis will be in a Technical Rationale document. How does the Application Guidance in PRC-025-2 fit in with the new schematic?

In addition, Texas RE requests the technical reason that the GO might provide a base setting on capability that is higher than what is reported to the Transmission planner, as noted in Attachment 1.

Texas RE also noticed the following grammatical issues/typos:

- The header still has "-1" throughout Standard.
- Applicability section 4.1 references "3.2, Facilities" which does not exist. It should reference "4.2, Facilities".
- Facility section 4.2.4 has two sentences that conflict. The first sentence says "used exclusively to export"; the second sentence says "may also supply". If an element is used exclusively for something, that precludes it from also including something else.
- The Compliance Monitoring Process section is incorrectly numbered as "8" (and subparts 8.1, 8.2, etc.).

Likes 0	
Dislikes 0	

Response

Ruth Miller - Exelon - 5	
Answer	
Document Name	
Comment	
None. Thank You	
Likes 0	
Dislikes 0	
Response	
George Brown - Acciona Energy North America - 5	
Answer	
Document Name	
Comment	
As written, NERC Reliability Standard PRC-025-2 Generator Relay Loadability does not account for equipment limitations of the generator step-up transformer or generation lead line that would not allow an entity to set it's protective relays to the level as specified within the standard. The SDT needs add additional option for these application that is similar to option 5B.	
Likes 0	
Dislikes 0	
Response	
Sergio Banuelos - Tri-State G and T Association, Inc. - 1,3,5 - MRO,WECC	
Answer	
Document Name	
Comment	
Tri-State would like to point out that there seems to be an error in "Section 4.1 Functional Entities" where the sub bullets are referencing section "3.2, Facilities." That should be "4.2, Facilities."	
Likes 0	

Dislikes 0	
Response	
David Ramkalawan - Ontario Power Generation Inc. - 5	
Answer	
Document Name	
Comment	
OPG recommend that instead of “relay location” to use “relay associated instrument transformers (PT’s/CT’s) location”. Clarification are recommended for the cases where the protective device settings are not achievable due to additional possible constrictions related to the supply path associated equipment. This can be achieved by defining the “resource” in Option 5b.	
Likes 0	
Dislikes 0	
Response	
Stephanie Burns - Stephanie Burns On Behalf of: Michael Moltane, International Transmission Company Holdings Corporation, 1; - Stephanie Burns	
Answer	
Document Name	
Comment	
Please clarify if switch-onto-fault is meant to be included in Attachment 1: Relay Settings. Exclusion #1 states, “Any relay elements that are in service only during start up.” Is switch-onto-fault included as an element that is only service during start up? PRC-023 specifically addresses switch-onto-fault in Attachment A as applicable to the standard; addressing switch-on-to-fault in PRC-025 would provide consistency and clarity between the two similar standards.	
Likes 0	
Dislikes 0	
Response	
Shelby Wade - PPL - Louisville Gas and Electric Co. - 1,3,5,6 - SERC,RF, Group Name PPL NERC Registered Affiliates	
Answer	
Document Name	

Comment
Section 4.1 (Functional Entities) references the Elements listed in Section 3.2 (Facilities); however, Section 3.2 (Facilities) does not exist within the PRC-025-2 – Generator Relay Loadability proposed standard document. Section 4.1 (Functional Entities) should instead be updated to reference the Elements listed in Section 4.2 (Facilities).

Likes 0	
Dislikes 0	

Response

Karie Barczak - DTE Energy - Detroit Edison Company - 3,4,5, Group Name DTE Energy - DTE Electric

Answer	
Document Name	

Comment
none

Likes 0	
Dislikes 0	

Response

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

Answer	
Document Name	

Comment
Duke Energy recommends the drafting team consider adding another option (perhaps 13c) that would address the high side UAT overcurrent settings under this standard. We suggest adding: *“Where there is only one UAT low side protective device that is set at a minimum 135% of the UAT nameplate or 135% or greater than load operating at .85 per unit voltage, the UAT high side protective device must be set equal to or coordinate with the low side protective device.”* The issue this would address is the prudent protection settings and compliance of the high side overcurrent with the standard. In some instances, the high side overcurrent is coordinating with the low side overcurrent. Currently, there is nothing that is addressing the low side. We feel that this is a technical flaw in the standard, which should be addressed.

Also, there are some instances where some BES UAT's with high side fuses will operate at less that 150% UAT ratings. Based on these instances, we feel that fuses should be considered as an addition to the relay type category.

We suggest that the drafting team consider making the changes referenced above to correct the technical errors, or remove references to the UAT in the standard altogether.

Likes 0	
Dislikes 0	

Response

Tom Haire - Rutherford EMC - 3

Answer	
Document Name	

Comment

Section 4.2.5 should have a minimum threshhold.

Section 4.1 should reference 4.2 not 3.2

Likes 0	
Dislikes 0	

Response

Thomas Foltz - AEP - 5

Answer	
Document Name	

Comment

AEP has chosen to vote negative on the proposed draft of PRC-025-2, driven by our concerns related to the proposed implementation plan (detailed in our response to Q7).

AEP recommends a more appropriate per unit voltage level of 0.85 per unit, rather than 1.0 per unit, for options 13a, 13b, 17, and 18 within Table 1.

In the Applicability section, all references to "3.2, Facilities" should instead be "**4**.2, Facilities."

Likes 0	
Dislikes 0	

Response

Additional comments/information received from Russel Mountjoy – MRO NSRF

Questions

1. Do you agree that the proposed new Option 5b in PRC-025-2, Table 1 addresses cases where the applicable entity is unable to achieve the 130% threshold of Option 5a for overcurrent relays? See Figure A also. If not, please explain why and provide an alternative proposal.

   ☐ Yes

   ☒ No

   Comments: Option 5b is helpful and a clear improvement. However, Option 5b isn't a complete solution. Not all solar and wind facilities are new. Some wind / solare facilities won't have an outside source that remains in business to provide internal capability curves. Therefore, Option 5 should allow a simulation option where entities can show through a verified model (MOD-026 / MOD-027) that the wind / solar farm will remain on-line for widespread voltage depressions which drives the 130% overcurrent margin reliability requirement.

2. Do you agree that the proposed revisions to PRC-025-2 – Attachment 1: Relay Settings (including Table 1) for applications involving overcurrent relays clarify that the IEEE device element 50 (i.e., instanteous) as well as low voltage trip designations commonly referred to as L (long time delay), S (short time delay), and I (instantaneous) by manufacturers are required to comply with the standard? If not, please explain why and provide an alternative proposal.

   ☐ Yes

   ☒ No

   Comments: The NERC standard refers to relays and the Table 1 heading refers to relays, but Pickup was struck and Option 5 refers to overcurrent elements. Where the standard refers to "elements" please add the word "PRC-025 relay" in front to clearly state that only "PRC-025 relays" are applicable, not control systems, not protective algorithms, and not fuses.

   If the drafting team meant to include more protective elements than relays, the NERC standard needs to clearly state the protective elements covered. NERC standards are written to zero defect and subject matter experts must clearly understand where the law applies. Until NERC standards allow some room for some small amount of error to be corrected without incurring a violation such as the six sigma or cyber security standards, NERC compliance standards and boundaries must be absolutely clear.

3. Do you agree that the proposed revisions in the “Application” column of Table 1 for Options 1 through 6 clarify that applicable protective relays associated with “all” listed Elements are to be set using the setting criteria of Table 1? If not, please explain why and provide an alternative proposal.

☐ Yes

☒ No

Comments: No. There is a discussion in the Technical Guidance section that discusses the inclusion of collector system protective elements. However, Table 1 uses the NERC capitalized term “Element” which specifically excludes collector systems via NERC and industry agreement in 2014. This is documented in the NERC bulk Electric System Definition Reference Document dated April 2014, see the cover page and page 21 of 85.

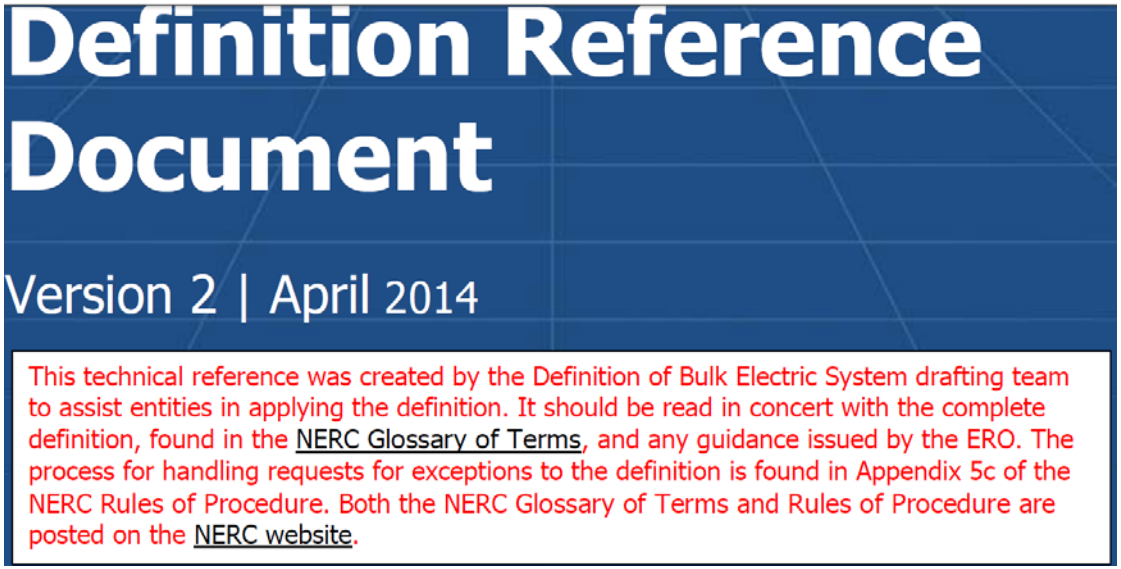
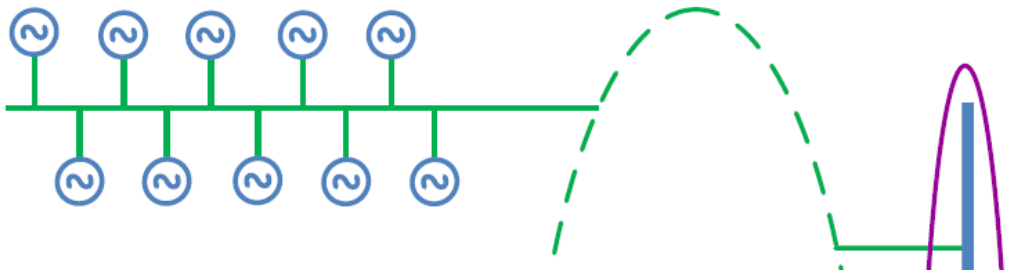


Figure I4-2 depicts a dispersed generation site and substation design with unknown collector system configuration.

Typical dispersed generation site and substation design (single transformation of voltage level) with a gross aggregate nameplate rating of 80 MVA (Individual Generator Unit Rating: 2 MVA). By application of Inclusion I4 the dispersed power producing resources and the Elements from the point of aggregation to the common point connection are BES Elements.

Green indicates the portions of the Collector System that are not included in the BES.

Blue identifies the dispersed power producing resources and BES Elements between the point where those resources aggregate to greater than 75 MVA to a common point of connection at a voltage of 100 kV or above.



Link:

http://www.nerc.com/pa/RAPA/BES%20DL/bes_phase2_reference_document_20140325_final_clean.pdf

Please state that Technical Guidance is for examples only, guidance isn't enforceable and cannot alter the scope of compliance.

4. Do you agree that the proposed revisions in Table 1 for Options 14 thorugh 16 address cases where generating facilities are remote to the transmission network by allowing setting criteria based on the simulation of field forcing in response to a 0.85 per unit voltage at the remote end of the line? If not, please explain why and provide an alternative proposal.

   ☒ Yes

   ☐ No

   Comments:

5. Do you agree with the removal of the leading term "Pickup" in "Pickup Setting Criteria" in Table 1? If not, please explain why and provide an alternative proposal.

   ☐ Yes

   ☒ No

   Comments:

The applicability section states that PRC-025 applies to relays. Removing “Pickup” suggests the drating team is looking for additional protective elements in addition to relays. If the SDT plans to consider more than PRC-025 protective relays, the applicability criteria needs to be adjusted in addition to removing “Pickup”. Relays or what is meant by relay for PRC-025 needs to be clearly defined so compliance can clearly identify when compliance has been met.

6. Do you agree with the miscellaneous revisions made to the PRC-025-2 – Application Guidelines? If not, please explain why and provide an alternative proposal.

   ☒ Yes

   ☐ No

   Comments:

7. Do you agree with implementation period of (1) 12 months for cases with equipment removal or replacement **is not** necessary, and (2) 36 months where equipment removal or replacement **is** necessary based on the considerations listed in the Implementation Plan? If not, please provide a justification for increasing or decreasing the proposed implementation periods.

   ☐ Yes

   ☒ No

   Comments: No. The SDT was not clear with its first implementation that collector systems were in scope as Technical Guidance cannot alter the scope of compliance and the applicability section 4.2.5 by itself did not make it clear that non-BES collector systems were being included contrary to the NERC Bulk Electric System Definition Reference Document dated April of 2014. Entities need another 60 months to staff and build systems of record supporting zero defect compliance monitoring and change management on non-BES collector systems.

8. Do you agree with the Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) for the requirement in the proposed PRC-025-2? If not, please identify the need here.

   ☒ Yes

   ☐ No

   Comments:

9. Do the revisions proposed in PRC-025 provide a cost effective solution to the issues? For example, the revisions (i.e., Options 14b, 15b, and 16b) addressing remote weak generating plants in comparison to a strong transmission system and using the resource capability curve (i.e.,

Option 5b) to demonstrate loadability over the current 130 percent setting criteria? If not, please identify other cost effective alternatives of the issues addressed in the project.

☐ Yes

☒ No

Comments: Not as proposed. Cost efficiency can be achieved by focusing on the right impactful objectives. Focus on common-mode design issues and exclude zero defect compliance monitoring / change management for individual collector systems or individual dispersed power producing resources.

The NSRF suggests the SDT modify the applicability section to concentrate of common-mode design issues affecting 75 MVA or more of aggregated dispersed power resource generators. Zero defect compliance monitoring and change management for collector systems and individual generators should be clearly excluded similar to PRC-005-6.

This appropriately focuses compliance efforts on the measurable impacts of common mode design issues and reduces the administrative burden of explicitly tracking and monitoring individual dispersed power producing resources.

10. Are you aware of any conflicts between the proposed standard revisions and any regulatory function, rule, order, tariff, rate schedule, legislative requirement, or agreement? If **yes**, please identify the conflict here.

☐ Yes

☒ No

Comments: No, but the SDT should check to see if the inclusion of collectors sytem(s) could infringe on state jurisdictions.

11. Are you aware of a need for a regional variance or business practice that should be considered with this project? If **yes**, please identify the need here.

☐ Yes

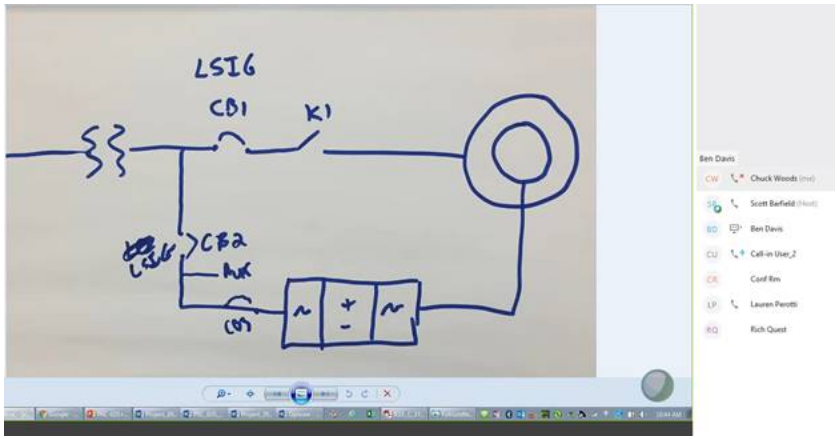
☒ No

Comments:

12. If you have any other comments on this Standard that you haven't already mentioned above, please provide them here:

Comments:

Member entities, regulators, and regional entities need to have the same pictures and concepts so that potential staff and cost effectiveness discussions can be considered. Consider the following individual dispersed power producing resource picture discussed at the PRC-025 SDT.



For clarity, consider comparing impacts in terms of PRC-025 devices to PRC-005 devices. Discuss PRC-025 "protective elements" or devices (which can be more than relays) expected by the PRC-025 drafting team.

As an example, a GE wind turbine can have two nacelle breakers / relays and a molded case breaker /relay at the base of the wind tower, creating three "protective elements" or devices per wind turbine. Each wind turbine has a 690 / 34,500 volt padmount transformer with a low-side and high-side fuse potentially creating three more "protective elements" or devices per padmount if included in the PRC-025 protective element definition. Each radial collector can handle approximately 20 - 30 MVA and typically has 10 – 15 turbines per single radial collector breaker. All of these items (and potentially more, given the "smart crowbar" example from the recent NERC lessons learned) would have to be tracked for zero defects, such as perfect settings, coordinated, and perfect knowledge of changes.

Extrapolating the above example for approximately 3,000 wind turbines you could easily have a PRC-025 program that quickly surpasses the workload of a PRC-005-6 program:

1. Wind turbine protective elements (breakers CB1, CB2, and CB3 per turbine) = 3*3,000 turbines = 9,000 protective elements to track and coordinate.
2. Other wind turbine protective elements such as smart crowbars = 1 smart crowbar * 3,000 turbines = 3,000 protective elements to track and coordinate.
3. Each wind turbine has a padmount transformer that may need to be tracked and coordinated = 3,000 padmount transformers to track and coordinate.
4. Padmount protective elements such as fuses (one high-side and one low-side) if included in a future protective element definition = 2*3,000 padmount transformers = 6,000 protective elements to track and coordinate.
5. Radial collector breakers = 300 radial collector breakers assuming on average each collector breaker serves approximately 10 MVA of wind generation and coordinate.

In this 3,000 wind turbine example there are 21,300 "protective elements" to track and maintain to zero defect for PRC-025. Exclude the padmount transformer fuses, and the number drops by 6,000 devices to 15,300. Excluding the padmount transformers and fuses drops the number to 12,300 devices to track and coordinate. This doesn't include the substation System Protection devices that we already consider at the substation.

What benefit is derived from zero defect compliance monitoring and change management of individual PRC-025 protective elements versus addressing common mode design issues?

Below are some possible comments on PRC-025 to focus on the important reliability impacts of common-mode design issues versus individual resources or protective elements.

Proposed Solution:

1. Request that the PRC-025 standards drafting team consider the following applicability section changes to differentiate between significant Bulk Electric System (BES) Impacts that risk the loss of 75 MVA or more versus the loss of individual collectors or individual generators.

   Replace the proposed Applicability section 3.2.5

   ~~*3.2.5 Elements utilized in the aggregation of dispersed power producing resources.*~~

   With:

   3.2.5 Dispersed Power Producing Resource collector system common design mode issues that risk the loss of 75 MVA or more for a single event.

   3.2.6 Protection elements used in aggregating dispersed BES generation from the point where those resources aggregate to greater than 75 MVA to a common point of connection at 100kV or above are excluded except for common design mode issues identified for 3.2.5.

2. Request that the PRC-025 standards drafting team consider defining "Protective element" for PRC-025 means, "protective tripping relays, protective tripping padmount relays, or protective generator control system trips designed to limit individual generator damage on the collector system. Protective element excludes fuses.

3. Request that the PRC-025 standards drafting team consider defining a NERC Dispersed Power Producing Resource Collector System such as:

   Collector System: Radial facilities used to aggregate dispersed power producing resources designed primarily to deliver such aggregate capacity to a common point of connection at a voltage of 100 kV or above.

4. Request that the PRC-025 standards drafting team consider modifying the existing NERC definition of "Element" and "Facility" to separate plant issues from individual generator issues (thanks to Darnez for this item):

   NERC Defined Element: Any electrical device with terminals that may be connected to other electrical devices such as ~~a generator~~, an individual generator, an individual dispersed power producing resource, transformer, circuit breaker, bus section, or transmission line. An Element may be comprised of one or more components.

NERC Defined Facility: A set of electrical equipment that operates as a single Bulk Electric System Element (e.g., a line, a ~~generator~~ generating plant or aggregate dispersed power producing plant, a shunt compensator, transformer, etc.)