

Comment Report

Project Name: 2021-05 Modifications to PRC-023 | Standard Authorization Request

Comment Period Start Date: 6/29/2021

Comment Period End Date: 7/28/2021

Associated Ballots:

There were 32 sets of responses, including comments from approximately 102 different people from approximately 86 companies representing 10 of the Industry Segments as shown in the table on the following pages.

Questions

1. Do you agree with the proposed scope as described in the SAR? If you do not agree, or if you agree but have comments or suggestions for the project scope please provide your recommendation and explanation.

2. Provide any additional comments for the SAR drafting team to consider, if desired.

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,NA - Not Applicable,RF,SERC,Texas RE,WECC	ACES Standard Collaborations	Bob Solomon	Hoosier Energy Rural Electric Cooperative, Inc.	1	SERC
					Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					Bill Hutchison	Southern Illinois Power Cooperative	1	SERC
					Jennifer Bray	Arizona Electric Power Cooperative, Inc.	1	WECC
					Ryan Strom	Buckeye Power, Inc.	5	RF
					Susan Sosbe	Wabash Valley Power Association	3	RF
					Scott Brame	North Carolina Electric Membership Corporation	3,4,5	SERC
MRO	Kendra Buesgens	1,2,3,4,5,6	MRO	MRO NSRF	Bobbi Welch	Midcontinent ISO, Inc.	2	MRO
					Christopher Bills	City of Independence Power & Light	4	MRO
					Fred Meyer	Algonquin Power Co.	1	MRO
					Jamie Monette	Allete - Minnesota Power, Inc.	1	MRO
					Jodi Jensen	Western Area Power Administration - Upper Great Plains East (WAPA)	1,6	MRO

					John Chang	Manitoba Hydro	1,3,6	MRO
					Larry Heckert	Alliant Energy Corporation Services, Inc.	4	MRO
					Marc Gomez	Southwestern Power Administration	1	MRO
					Matthew Harward	Southwest Power Pool, Inc.	2	MRO
					LaTroy Brumfield	American Transmission Company, LLC	1	MRO
					Bryan Sherrow	Kansas City Board Of Public Utilities	1	MRO
					Terry Harbour	MidAmerican Energy	1,3	MRO
					Jamison Cawley	Nebraska Public Power	1,3,5	MRO
					Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					Jeremy Voll	Basin Electric Power Cooperative	1,3,5	MRO
					Joe DePoorter	Madison Gas and Electric	4	MRO
					David Heins	Omaha Public Power District	1,3,5,6	MRO
					Bill Shultz	Southern Company Generation	5	MRO
Duke Energy	Kim Thomas	1,3,5,6	FRCC,RF,SERC,Texas RE	Duke Energy	Laura Lee	Duke Energy	1	SERC
					Dale Goodwine	Duke Energy	5	SERC
					Greg Cecil	Duke Energy	6	RF

FirstEnergy - FirstEnergy Corporation	Mark Garza	1,3,4,5,6		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF
					Ann Carey	FirstEnergy - FirstEnergy Solutions	6	RF
					Mark Garza	FirstEnergy- FirstEnergy	4	RF
Southern Company - Southern Company Services, Inc.	Pamela Hunter	1,3,5,6	SERC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					Jim Howell	Southern Company - Southern Company Services, Inc. - Gen	5	SERC
Northeast Power Coordinating Council	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	NPCC Regional Standards Committee no NGrid	Guy V. Zito	Northeast Power Coordinating Council	10	NPCC
					Randy MacDonald	New Brunswick Power	2	NPCC
					Glen Smith	Entergy Services	4	NPCC

Alan Adamson	New York State Reliability Council	7	NPCC
David Burke	Orange & Rockland Utilities	3	NPCC
Helen Lainis	IESO	2	NPCC
David Kiguel	Independent	7	NPCC
Nick Kowalczyk	Orange and Rockland	1	NPCC
Joel Charlebois	AESI - Acumen Engineered Solutions International Inc.	5	NPCC
Mike Cooke	Ontario Power Generation, Inc.	4	NPCC
Salvatore Spagnolo	New York Power Authority	1	NPCC
Shivaz Chopra	New York Power Authority	5	NPCC
Deidre Altobell	Con Ed - Consolidated Edison	4	NPCC
Dermot Smyth	Con Ed - Consolidated Edison Co. of New York	1	NPCC
Peter Yost	Con Ed - Consolidated Edison Co. of New York	3	NPCC
Cristhian Godoy	Con Ed - Consolidated Edison Co. of New York	6	NPCC
Nurul Abser	NB Power Corporation	1	NPCC

					Randy MacDonald	NB Power Corporation	2	NPCC
					Michael Ridolfino	Central Hudson Gas and Electric	1	NPCC
					Vijay Puran	NYSPS	6	NPCC
					ALAN ADAMSON	New York State Reliability Council	10	NPCC
					Sean Cavote	PSEG - Public Service Electric and Gas Co.	1	NPCC
					Brian Robinson	Utility Services	5	NPCC
					Quintin Lee	Eversource Energy	1	NPCC
					Jim Grant	NYISO	2	NPCC
					John Pearson	ISONE	2	NPCC
					Nicolas Turcotte	Hydro-Qu?bec TransEnergie	1	NPCC
					Chantal Mazza	Hydro-Quebec	2	NPCC
					Michele Tondalo	United Illuminating Co.	1	NPCC
					Paul Malozewski	Hydro One Networks, Inc.	3	NPCC
					Sean Bodkin	Dominion - Dominion Resources, Inc.	6	NPCC
OGE Energy - Oklahoma Gas and Electric Co.	Sing Tay	1,3,5,6	SPP RE	OKGE	Sing Tay	OGE Energy - Oklahoma	6	MRO
					Terri Pyle	OGE Energy - Oklahoma Gas and Electric Co.	1	MRO
					Donald Hargrove	OGE Energy - Oklahoma	3	MRO

						Gas and Electric Co.		
					Patrick Wells	OGE Energy - Oklahoma Gas and Electric Co.	5	MRO

1. Do you agree with the proposed scope as described in the SAR? If you do not agree, or if you agree but have comments or suggestions for the project scope please provide your recommendation and explanation.

Jeanne Kurzynowski - CMS Energy - Consumers Energy Company - 3,4,5 - RF

Answer No

Document Name

Comment

R2 was included in PRC-023-4 for the express reason that, should a FAULT on the protected element occur during heavy load flows anticipated by the standard, OOSB elements will not detect the transition from a load condition to a FAULT as a swing and block tripping for that condition. Absent this requirement, there is a definite possibility that OOSB elements would restrain tripping for these FAULT conditions, and thereby result in a un-cleared fault. Similarly, Attachment A, 2.3 endeavors to assure that FAULTS during stable power swings will be detected and cleared.

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer No

Document Name

Comment

MPC supports MRO NERC Standards Review Forum (NSRF) comments.

Likes 0

Dislikes 0

Response

Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer No

Document Name

Comment

The NSRF offers the following perspective for consideration by the Standard Drafting Team (SDT) as the issue under consideration appears to be one of Dependability (tripping when needed) and Security (preventing overtripping when not needed) and determining what requirements are needed to provide the most reliable result.

As stated in the “Background” section on the Project 2021-05 page, the requirement to allow tripping in a Standard whose intent is to block tripping, has led to some entities disabling their OOSB relays. If that is the case, is the answer to eliminate the dependability requirement in favor of security or is there a way to clarify the standard to balance and achieve both objectives at the same time? If not, the SAR should be updated for clarity.

Dependability: The provisions in PRC-023 that require tripping for three-phase faults during stable power swings should remain. To the extent a short-circuit fault occurs on a transmission line at the time of a stable power swing, protection systems must be capable of detecting the fault, distinguishing it from the stable power swing and tripping the line accordingly.

For lines identified as meeting one or more of the four criteria outlined in PRC-026-1 R1, ensuring fault protection during stable power swings could be accomplished by installing either two redundant line differential schemes (where line differential schemes respond to all short-circuit faults but not to high loading or power swings) or a primary line differential scheme and a backup phase distance relay scheme (such as a DCB scheme).

Security: At the same time, the protection system should also be designed to avoid tripping on stable power swings in accordance with NERC PRC 026-1.

Out-of-step blocking could be employed to block tripping of the backup phase distance relay scheme for a stable power swing, but the line differential scheme would not be subject to supervision by the out-of-step blocking scheme as line differential relays do not respond to loading or power swings, and thus the line differential relay could ensure tripping for three-phase faults even when a stable power swing exists just prior to the fault.

Given the relatively few number of lines where stable power swings are typically an issue (i.e., meet one or more of the four criteria in PRC-026-1 Requirement 1), the above approach would provide superior protection to a scheme that disables fault protection during a stable power swing, thus exposing a power system to a potential catastrophic event. Given the possibility of multiple faults occurring close in time due to a common root cause (e.g., area weather patterns that tend to cause multiple transmission short-circuit faults such as lightning or wind), it is important to maintain short-circuit fault protection at all times, and this can be done in a manner that also avoids false tripping due to stable power swings.

For this reason, we do not see the need to modify PRC-023-1 to remove the requirement that fault protection is in place during stable power swings.

Likes 0

Dislikes 0

Response

Gail Elliott - International Transmission Company Holdings Corporation - NA - Not Applicable - MRO,RF

Answer

No

Document Name

Comment

- ITC agrees with the proposed scope of removing R2 but for a different reason than the SAR’s rationale. Modern relays which ITC is familiar with incorporate standard logic in OOSB functions to ensure tripping for 3ph faults during a power swing or loading inside the first blinder. Furthermore, it is

a matter of good engineering practice to ensure tripping during conditions such as a swing or heavy line loading. This requirement is therefore simply an administrative burden without improving reliability. PRC-026 already ensures that if OOSB is needed that reliable fault detection is maintained.

- ITC disagrees with the proposed scope removal of Att A 2.3. With the removal of R2, the confusion with Att A 2.3 is addressed and we should not anticipate what OOST for stable power swings may exist in the future that need to be covered by this exclusion.

Likes 0

Dislikes 0

Response

Bobbi Welch - Midcontinent ISO, Inc. - 2

Answer

No

Document Name

Comment

MISO offers the following perspective for consideration by the Standard Drafting Team (SDT) as the issue under consideration appears to be one of Dependability (tripping when needed) and Security (preventing overtripping when not needed) and determining what requirements are needed to provide the most reliable result.

As stated in the "Background" section on the Project 2021-05 page, the requirement to allow tripping in a Standard whose intent is to block tripping, has led to some entities disabling their OOSB relays. If that is the case, it appears the answer should be to **clarify** the requirement as opposed to retiring it, to retain the Dependability aspect of the requirement. Alternatively, there may be a justification to retire the requirement; however, it is not clearly stated in the SAR. If the latter is the case, the SDT should clarify that in the SAR.

Recommendation: Modify "Industry Need" section as indicated below or revise the statement to justify why retiring the Dependability requirement will not result in less reliable operation:

"Requirement R2 should be clarified or removed because it has been interpreted to restrict the setting of OOSB elements making compliance with PRC-026 more difficult.

MISO suggests there *may* be a way for Dependability and Security objectives to be achieved at the same time (below).

Dependability: The provisions in PRC-023 that require tripping for three-phase faults during stable power swings should remain. To the extent a short-circuit fault occurs on a transmission line at the time of a stable power swing, protection systems must be capable of detecting the fault, distinguishing it from the stable power swing and tripping the line accordingly.

For lines identified as meeting one or more of the four criteria outlined in PRC-026-1 R1, ensuring fault protection during stable power swings could be accomplished by installing either two redundant line differential schemes (where line differential schemes respond to all short-circuit faults but not to high loading or power swings) or a primary line differential scheme and a backup phase distance relay scheme (such as a DCB scheme).

Security: At the same time, the protection system should also be designed to avoid tripping on stable power swings in accordance with NERC PRC 026-1.

Out-of-step blocking could be employed to block tripping of the backup phase distance relay scheme for a stable power swing, but the line differential scheme would not be subject to supervision by the out-of-step blocking scheme as line differential relays do not respond to loading or power swings, and thus the line differential relay could ensure tripping for three-phase faults even when a stable power swing exists just prior to the fault.

Given the relatively few number of lines where stable power swings are typically an issue (i.e., meet one or more of the four criteria in PRC-026-1 Requirement 1), the above approach would provide superior protection to a scheme that disables fault protection during a stable power swing, thus exposing a power system to a potential catastrophic event. Given the possibility of multiple faults occurring close in time due to a common root cause (e.g., area weather patterns that tend to cause multiple transmission short-circuit faults such as lightning or wind), it is important to maintain short-circuit fault protection at all times, and this can be done in a manner that also avoids false tripping due to stable power swings.

For this reason, we do not see the need to modify PRC-023-1 to remove the requirement that fault protection is in place during stable power swings.

Likes 0

Dislikes 0

Response

Leonard Kula - Independent Electricity System Operator - 2

Answer

Yes

Document Name

Comment

N/A.

Likes 0

Dislikes 0

Response

Carl Pineault - Hydro-Quebec Production - 1,5

Answer

Yes

Document Name

Comment

Not applicable for HQP

Likes 0

Dislikes 0

Response

Anthony Jablonski - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
<p>While not related to the SAR's concerns, the standard should define the period a TO, GO, or DP has to bring a circuit in compliance with R1 following notification by the PC of the circuit's inclusion on a list of circuits per application of Attachment B within standard itself. This period was previously defined in the Implementation Plan PRC-023-3, and was carried forward to PRC-023-4 by a FERC order (in Docket RD18-6-000) approving a second-filed errata to the RAS Implementation Plan. It seems inappropriate for a time period requiring ongoing use to be included in an Implementation Plan rather than the body of the standard. Any SDT assigned to revise PRC-023-4 should also address this issue, but if not, the SDT needs to define the period in the new Implementation Plan.</p>	
Likes	0
Dislikes	0
Response	
Jeremy Lorigan - Seminole Electric Cooperative, Inc. - 1,3,4,5,6	
Answer	Yes
Document Name	
Comment	
<p>While we do not necessarily agree completely with the arguments and justifications put forth in the SAR, :</p> <ul style="list-style-type: none"> • If industry confusion due to R2 and exclusion A2.3 has indeed led to utilities disabling the OOSB elements(for which no substantiating data have been provided in the SAR) without first making sure that disabling OOSB cannot lead to system instability that could cause cascading phenomena and eventual system collapse, then, • we do agree with the objective of the SAR that removal of such confusion is a good thing and would recommend that the decision to enable or disable OOSB should occur on a case-by-case basis after the required studies are performed. 	
Likes	0
Dislikes	0
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5 - WECC	
Answer	Yes
Document Name	

Comment

The requirement R2 and the attachment A 2.3 cause interpretation confusion and the proposal to remove both from the requirements would allow the normal functioning of the OOSB relays during power swing conditions.

Likes 0

Dislikes 0

Response

Alan Kloster - Great Plains Energy - Kansas City Power and Light Co. - 1,3,5,6 - MRO

Answer

Yes

Document Name

Comment

None

Likes 0

Dislikes 0

Response

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

Answer

Yes

Document Name

Comment

MEC supports MRO NSRF comments. MEC notes there are two opposing concerns, a potential conflict between PRC-026 and PRC-023 versus possible tripping. MEC believes the SAR should move forward even if there is a scope question and would like the SDT to investigate NERC standard conflict concerns between PRC-026 and PRC-023. It's MEC's understanding that if a transmission line is identified for PRC-026, a way to comply with PRC-026 is to enable Out-Of-Step blocking, but PRC-023 R2 interferes with that solution by too restrictively burdening the settings for the outer blinder technology to be dependable, therefore causing more compliance issues for the Transmission Owner to solve, hence why entities are removing the schemes.

Likes 0

Dislikes 0

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI supports the proposed SAR.	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC Regional Standards Committee no NGrid	
Answer	Yes
Document Name	
Comment	
The NPCC RSC agrees with the proposed scope as described in the SAR.	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	
Comment	
No additional comments.	
Likes 0	
Dislikes 0	
Response	

Daniel Gacek - Exelon - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Exelon supports the proposed SAR.	
Likes 0	
Dislikes 0	
Response	
David Jendras - Ameren - Ameren Services - 1,3,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,3,5	
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	
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	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes	0
Dislikes	0
Response	

Thomas Foltz - AEP - 3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Lindsay Wickizer - Berkshire Hathaway - PacifiCorp - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Sing Tay - OGE Energy - Oklahoma Gas and Electric Co. - 1,3,5,6, Group Name OKGE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Maryanne Darling-Reich - Black Hills Corporation - 1,3,5,6 - MRO,WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	

Texas RE agrees Requirement R2 should be evaluated for the reasons given in the SAR. Texas RE recommends the drafting team consider an exception process to allow for out-of-step relays to trip for unstable power swings that may fall within the criteria in Requirement R1.

Likes 0

Dislikes 0

Response

2. Provide any additional comments for the SAR drafting team to consider, if desired.

Bobbi Welch - Midcontinent ISO, Inc. - 2

Answer

Document Name

Comment

Expand the scope of the SAR to align “trip” and “operate” terminology in PRC-023 with PRC-026.

If modifications to PRC-023 move forward, the SDT should consider addressing another problematic aspect of the standard; i.e. the use of the term “operate” in lieu of “trip” in the various criteria associated with Requirement 1. Aligning the wording in PRC-023 with PRC-026 would help to ensure clarity and consistency of application.

The term “operate” typically applies to the operation of a single relay element whereas the term “trip” typically applies to the tripping of one or more circuit breakers, and thus the isolation of a protective zone. Having said this, an entire transmission relay scheme is often comprised of multiple relay elements, and thus more than one element must “operate” to initiate a “trip”. Therefore, if the goal is to avoid a false trip, all that is necessary is to ensure at least one of the relay elements will not operate. It is not necessary to ensure all relay elements associated with the protective relay scheme will not operate.

For example, in a direction comparison blocking scheme, the Zone 3 mho distance element (21) is often supervised by a non-directional overcurrent unit (50), and both elements must operate to initiate a trip. The non-directional overcurrent relay element must reach for faults on the opposite end of the line and possibly beyond to facilitate remote backup protection, and this requirement often means the overcurrent relay element must be set such that it could operate under high levels of loading (particularly for longer lines), but this will not result in a line trip since the Zone 3 mho distance element will not operate, thus the scheme should be compliant with the spirit of PRC-023, which is to avoid false tripping under high loading conditions. However, one could interpret the term “operate” as applied to individual relay elements in Requirement 1 based on the way the standard is drafted, and this interpretation would require that none of the relay elements are allowed to operate under load, which is an unnecessary requirement that makes compliance much more challenging.

While to date the interpretation of the standard is to avoid tripping and this should be the intent of the standard, the actual application is not well aligned with that interpretation.

Expand the make-up of the SDT to include a representative from an end-user perspective

MISO agrees with the SAR that the core of the SDT should consist of individuals from the TO, GO and DP functions. That said, we also recommend the SDT consider including an individual(s) from an end-use perspective; i.e. one TOP and/or one TP on the SDT.

Likes 0

Dislikes 0

Response

Gail Elliott - International Transmission Company Holdings Corporation - NA - Not Applicable - MRO,RF

Answer

Document Name	
Comment	
- PRC-026 already ensures that if OOSB is needed that reliable fault detection is maintained.	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations	
Answer	
Document Name	
Comment	
Thank you for the opportunity to comment. ACES appreciates the efforts of drafting team members and NERC staff in continuing to enhance the standards for the benefit of reliability of the BES.	
Likes 0	
Dislikes 0	
Response	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	
Document Name	
Comment	
<ul style="list-style-type: none"> Expand the scope of the SAR to align “trip” and “operate” terminology in PRC-023 with PRC-026. <p>If modifications to PRC-023 move forward, the SDT should consider addressing another problematic aspect of the standard; i.e. the use of the term “operate” in lieu of “trip” in the various criteria associated with Requirement 1. Aligning the wording in PRC-023 with PRC-026 would help to ensure clarity and consistency of application.</p> <p>The term “operate” typically applies to the operation of a single relay element whereas the term “trip” typically applies to the tripping of one or more circuit breakers, and thus the isolation of a protective zone. Having said this, an entire transmission relay scheme is often comprised of multiple relay elements, and thus more than one element must “operate” to initiate a “trip”. Therefore, if the goal is to avoid a false trip, all that is necessary is to ensure at least one of the relay elements will not operate. It is not necessary to ensure all relay elements associated with the protective relay scheme will not operate.</p>	

For example, in a direction comparison blocking scheme, the Zone 3 mho distance element (21) is often supervised by a non-directional overcurrent unit (50), and both elements must operate to initiate a trip. The non-directional overcurrent relay element must reach for faults on the opposite end of the line and possibly beyond to facilitate remote backup protection, and this requirement often means the overcurrent relay element must be set such that it could operate under high levels of loading (particularly for longer lines), but this will not result in a line trip since the Zone 3 mho distance element will not operate, thus the scheme should be compliant with the spirit of PRC-023, which is to avoid false tripping under high loading conditions. However, one could interpret the term “operate” as applied to individual relay elements in Requirement 1 based on the way the standard is drafted, and this interpretation would require that none of the relay elements are allowed to operate under load, which is an unnecessary requirement that makes compliance much more challenging.

While to date the interpretation of the standard is to avoid tripping and this should be the intent of the standard, the actual application is not well aligned with that interpretation.

- **Expand the make-up of the SDT to include a representative from an end-user perspective**

The NSRF agrees with the SAR that the core of the SDT should consist of individuals from the TO, GO and DP functions. That said, we also recommend the SDT consider including an individual(s) from an end-use perspective; i.e. one TOP and/or one TP on the SDT.

Likes 0

Dislikes 0

Response

Andy Fuhrman - Minnkota Power Cooperative Inc. - 1,5 - MRO

Answer

Document Name

Comment

MPC supports MRO NERC Standards Review Forum (NSRF) comments.

Likes 0

Dislikes 0

Response

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

Answer

Document Name

Comment

MEC supports MRO NSRF comments.

Likes 0

Dislikes 0

Response

Alan Kloster - Great Plains Energy - Kansas City Power and Light Co. - 1,3,5,6 - MRO

Answer

Document Name

Comment

None

Likes 0

Dislikes 0

Response

Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter

Answer

Document Name

Comment

N/A

Likes 0

Dislikes 0

Response

Dwanique Spiller - Berkshire Hathaway - NV Energy - 5 - WECC

Answer

Document Name

Comment

Following additional points should be considered.

- R1 criteria 6 should be removed as it is not used. This has just been used as a place holder after subsequent revisions in PRC-023-3 and PRC-023-4'
- Attachment A 2.4 should be removed as it is not used. This has just been used as a place holder after subsequent revisions in PRC-023-3 and PRC-023-4.

Likes 0

Dislikes 0

Response

Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC

Answer

Document Name

Comment

BPA is presently facing a situation where we need to add an OOSB function to two transmission lines, but PRC-023 R2 prevents us from doing so with the existing relays. We can see the need to take a closer look at PRC-023 R2 to possibly eliminate the issues that this requirement creates.

Likes 0

Dislikes 0

Response

Daniela Atanasovski - APS - Arizona Public Service Co. - 1,3,5,6

Answer

Document Name

Comment

None

Likes 0

Dislikes 0

Response

Carl Pineault - Hydro-Qu?bec Production - 1,5

Answer	
Document Name	
Comment	
No comments	
Likes 0	
Dislikes 0	
Response	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	
Document Name	
Comment	
N/A.	
Likes 0	
Dislikes 0	
Response	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	
Document Name	
Comment	
No additional comments at this time.	
Likes 0	
Dislikes 0	
Response	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	

Answer	
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	

Additional response received from Charles Yeung – Southwest Power Pool, Inc. (RTO) – on behalf of ISO RTO Council SRC Members

Questions

1. Do you agree with the proposed scope as described in the SAR? If you do not agree, or if you agree but have comments or suggestions for the project scope please provide your recommendation and explanation.

Yes

No

Comments:

2. Provide any additional comments for the SAR drafting team to consider, if desired.

Comments: