

Name (20 Responses)

Organization (20 Responses)

Group Name (16 Responses)

Lead Contact (16 Responses)

Contact Organization (16 Responses)

IF YOU WISH TO EXPRESS SUPPORT FOR ANOTHER ENTITY'S COMMENTS WITHOUT ENTERING ANY ADDITIONAL COMMENTS, YOU MAY DO SO HERE. (1 Responses)

Comments (36 Responses)

Question 1 (33 Responses)

Question 1 Comments (35 Responses)

Question 2 (33 Responses)

Question 2 Comments (35 Responses)

Dominion
Louis Slade
NERC Compliance Policy
No
Dominion agrees with most points and conceptually supports the SDT effort to limit additional applicability of this to those facilities identified in the Considerations for Maintenance and Testing of Autoreclosing Schemes report. We are however concerned that footnote 1 requires the "equipment owner can demonstrate that a close-in three-phase fault present for twice the normal clearing time (capturing a minimum trip close- trip time delay) does not result in a total loss of generation in the Interconnection exceeding the largest unit within the Balancing Authority Area where the Automatic Reclosing is applied." We do not believe that most Distribution Providers or Generator Owners have access to the information, or staff with necessary skills to make such assessments. In fact, we are not confident that entities with such access and skilled staff can make such as assertion. At best we believe an entity with the necessary access and skills could perform an analysis and indicate whether acceptable voltages, flows, angles and stability would be adversely impacted by incorrect operation of an Automatic Reclosing. We do not believe such entity could determine whether or not an incorrect operation would "...result in a total loss of generation in the Interconnection exceeding the largest unit within the Balancing Authority Area where the Automatic Reclosing is applied." We therefore conceptually support most of the standard but request the SDT consider adding a requirement that the Transmission Planner provide a list of those facilities where incorrect operation of Automatic Reclosing has been shown to result in such loss or alternatively to identify facilities where incorrect operation could be shown to result in violation of IROLs.
No
The implementation plan should utilize Transmission Planner (TP) notification to applicable entities rather than simply base the plan on the regulatory approval date to start the implementation timelines. This would allow the notified entities to have the same amount of

time that is currently in the implementation plan upon notification from the Transmission Planner.

Doug Jensen

Vandolah Power Company

Yes

SPP Standards Review Group

Robert Rhodes

Southwest Power Pool

Yes

Would misoperations of automatic reclosing relays as specified in 4.2.6 have to be reported in PRC-004-2?

Yes

Herb Schrayshuen

Self

Yes

No

It will take longer than the team suggests. Suggest a survey to determine a date the industry can adhere to, if a survey has not been performed yet.

David Ramkalawan

OPG

Yes

Yes

Michelle R. D'Antuono

Ingleside Cogeneration LP (Occidental Chemical Corporation)

No

Ingleside Cogeneration LP is generally supportive of the changes that the drafting team has made to PRC-005-2 and supporting documentation to address FERC Order 758. First and

foremost, we agree that the definition of “Protection System” should not be modified as it has implications to any standard that uses the term. This far exceeds the scope of FERC’s directive – which only identifies recloser maintenance as a reliability imperative. Second, we believe that the underlying technical basis for the identification of recloser relays that “can affect the reliability” of the BES is sound. The analysis performed by NERC’s System Analysis and Modeling and System Protection and Control Subcommittees (SAMS-SPCS) is compelling in our view. In this manner, the industry and CEAs can focus on those components which may pose risk to the local system – and not expend resources on those which do nothing to improve electric service delivery. However, as a Generator Owner, we are not sure how we will capture the information we need to conduct an analysis of our recloser relays. We can approach our Balancing Authority to have them provide the “capacity of the largest generating unit” within their control area – but have no recourse if they refuse to respond due to security or anti-competitive reasons. Even if this is not an issue, it seems plausible that an extended outage of the BA’s largest generator may re-set PRC-005-3’s applicability threshold downward. If this happens, we may be required to re-evaluate our equipment base on a moment’s notice. We don’t believe it is the drafting team’s intent to establish thresholds which may change in this manner. It would be far simpler if an Interconnect-wide capacity threshold could be established within PRC-005-3. Those Balancing Authorities that require a lower threshold could communicate their expectations to their base as they see fit.

Yes

Nazra Gladu

Manitoba Hydro

No

(1) Definition of Terms Used in Standard - statements in this section are contradictory. Please clarify if “When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.” or whether “The following terms are defined for use only within PRC-005-3, and should remain with the standard upon approval rather than being moved to the Glossary of Terms.” Why are the following terms defined for use only within PRC-005-3 rather than being moved to the Glossary of Terms? (Automatic Reclosing, Unresolved Maintenance Issue, Segment, Component Type, Component and Countable Event). (2) Definitions of Terms Used in Standard, Protection System Maintenance Program (PSMP) (NERC Board of Trustees Approved Definition) - for clarity, the word ‘is’ in the following sentence, “...components is restored.” should be changed to “...components are restored.” Additionally, MH assumes that the words “NERC Board of Trustees Approved Definition” will be removed from the final version of the standard and that wording was provided for informational purposes only in the circulation of the standard. (3) Definitions of Terms Used in Standard, Automatic Reclosing - for clarity, we suggest beginning the definition with the following words ‘includes the following’. (4) Definitions of Terms Used in Standard, Segment - please clarify if the reference to Components in this definition is intended to be to the defined term “Components”? If so, the word should be capitalized at the end of this definition. If this is

not the intension, then an alternate word should be chosen to avoid confusion. (5) Definitions of Terms Used in Standard, Countable Event - the words "included in" from the last sentence of the definition are unnecessary and should be removed. (6) A. Introduction, 3. Purpose - for clarity, consider revising the purpose to read "To document and implement programs for the maintenance of all Protection Systems and Automatic Reclosing affecting the reliability of the Bulk Electric System (BES) for maintaining functional operation". (7) 4.2.6 Automatic Reclosing - for section consistency, the words 'applied on BES Elements, including:' should be added to 4.2.6. Additionally, sections 4.2.6.1 and 4.2.6.2 should be rewritten as follows: 4.2.6.1 "Automatic Reclosing Applied on BES Elements at generating plant substations...." 4.2.6.2 "Automatic Reclosing Applied on BES Elements at substations...." (8) 4.2 footnote 1 - reference is made to equipment owner which is an undefined term. For clarity, consider referring to the Responsible Entity instead. In addition, some words seem to be missing which could provide some guidance as to what is being compared. For example, is it the intent of meaning - "does not result in a total loss of generation in the Interconnection exceeding the generation of the largest unit within the Balancing Authority Area..."? (9) 4.2.6.3 - the words 'integral part' are very subjective and may be difficult to assess. (10) 5. Effective Date - for completeness and consistency with other standards, text from the implementation plan should be moved to the standard Effective Date section. (11) 3. Measures - use the acronym for Protection System Maintenance Program, PSMP in M1 and M4 since this is not the first instance of this definition. (12) 1.3. Evidence Retention - use the acronym for Protection System Maintenance Program, PSMP in the third paragraph of this section because this is not the first instance of this definition. (13) PRC-005 - Attachment A, Criteria for a Performance-Based Protection System Maintenance Program - for completeness, add the acronym (PSMP) after the title. (14) Section D, Compliance, 1.1 - the paraphrased definition of 'Compliance Enforcement Authority' from the Rules of Procedure is not the standard language for this section. Is there a reason that the standard CEA language is not being used? (15) Section D, Compliance, 1.3 - this section was not updated to reference Automatic Reclosing. (16) Protection System Maintenance Program is defined in the standard as PMSP but then inconsistently referenced using both the full term and the acronym. (17) R1 - there are inconsistent references throughout the requirements made to 'Protection System and Automatic Closing Component Types' vs. 'Protection System Component Type and Automatic Reclosing Components' vs. 'Protection System and Automatic Reclosing Components'. Please clarify if this is the intent or consider correcting. (18) R2, R3 and R4 - there appears to be inconsistency in the drafting of R1, R2 and R3 as to what is required. There is no requirement to "implement and follow" a PMSP within the time based program the way there is for the performance based program. (19) R5 - MH believes that the requirement should be to make efforts, not demonstrate efforts. Demonstrating or providing evidence of the efforts would be the measure. (20) VSLs, R1 - the Requirement refers to both Protection System and Automatic Reclosing Components while the VSL refers only to Components. (21) VSLs, R2 - the wording of the VSL for this requirement does not seem consistent with the wording of Attachment A. (22) VSLs, R3 and R4 - rather than writing 'more than x% but y% or less', it would be clearer to write 'more than x% but less than y%'.

No

(23) General - use the acronyms for "Protection System Maintenance Program", PSMP and for

“Board of Trustees”, BOT. Both terms are referenced multiple times within the Implementation Plan document.

John Bee

exelon and its Affiliates

No

We understand the concerns related to reclosing relays however we do not agree that these devices should be included in PRC-005 because reclosing relays are not a protective device. The current system stability studies do not rely on automatic reclosing to maintain the reliability of the Bulk Power System.

No

1. 4.2.6.1 – How would a PRC-005-3 relay engineer determine or be made aware of “the capacity of the largest generating unit within the Balancing Authority Area” at any given moment in time? (e.g., suppose a large Nuclear unit that historically constituted the largest unit in a given BAA gets retired? This could present an unintentional compliance trap for the PRC-005-3 owner, unless this information is routinely updated and published as part of another NERC Standard, or by some other mechanism wherein the relay engineer could keep abreast of such changes in a timely manner). 2. 4.2.6.1 – More clarity is needed on exactly what is meant by “generating plant substations”, since this collective phrase is not defined in NERC’s most recent Glossary of Terms, dated 05apr13. BGE example: Wagner Unit #4 Sync Breaker is physically located at Wagner Power Plant, but because the step-up voltage is 230kV, the output feeds into Brandon Shores 230kV substation, rather than the local 110kV substation where the other Wagner machines feed into. In this case, would Brandon Shores be considered the “generating plant substation” for Wagner Unit #4? 3. 4.2.6.2 – The stated inclusion criteria “one bus away from generating plants specified in Section 4.2.6.1” introduces further interpretation difficulty when considering other common generating configurations, such as: 1. The sync breaker is on the low voltage side of the GSU transformer and the GSU high side leads constitute a “short” transmission line between the Plant (GO) and Substation (TO) 2. Same as above but the sync breaker is located on the high side of the GSU and connects to the TO switchyard by the “short” transmission line. 3. The sync breakers owned by the TO are located in the substation and connected to the high side of the GSU but operated by the GO, again at the other end of a short transmission line GO. (A legacy arrangement that results from the disintegration of formerly vertically integrated utilities) 4. Sync breaker on the high side of the GSU at the plant, but there is a “long” transmission line connecting the sync breaker to a TO substation.

David Jendras

Ameren

No

Ameren concurs with and also incorporates the SERC PCS comment regarding the interval for Automatic Reclosing exclusion studies by this reference. Ameren specific comments are: (1) We

request that the SDT add a FAQ: "Automatic Reclosing is a control, not a protective function; why then is Automatic Reclosing maintenance included in the Protection System Maintenance Program (PSMP)?" Answer: "Yes, Automatic Reclosing is a control function. The standard's title 'Protection System and Automatic Reclosing Maintenance' clearly distinguishes its function from the Protection System. Automatic Reclosing is included in the PSMP because it is more concise than creating a parallel and essentially identical 'Control System Maintenance Program' for the two Automatic Reclosing component types." (2) We request that the SDT add a FAQ: "Our maintenance practice consists of initiating the Automatic Reclosing relay and confirming the breaker closes properly. This practice verifies the Control circuitry associated with Automatic Reclosing including the close coil. Do you agree?" Answer: "Yes, since the breaker does successfully close in your practice. The intent of the Unmonitored Control circuitry Maintenance Activity is for the entity to functionally prove the Automatic Reclosing control path is intact through the breaker close coil." (3) We request that the SDT revise the Countable Event definition because as written it incorrectly implies that an Automatic Reclosing failure is a Misoperation. We believe that the Automatic Reclosing exclusion needs to be moved to a different sentence. (4) We request that the SDT add a FAQ: "Why was a close-in three phase fault present for twice the normal clearing time chosen for the Automatic Reclosing exclusion? It exceeds TPL requirements and ignores the breaker closing time in a trip-close-trip sequence, thus making the exclusion harder to attain." Answer: "This test was chosen intentionally to err on the side of conservatism." (5) We request that the SDT augment the FAQ 2.4.1 to include "IEEE Device No. 79" in referring to the Automatic Reclosing relay because this helps clarify the scope.

Yes

PacifiCorp

Ryan Millard

PacifiCorp

Yes

Yes

Chris Mattson

Tacoma Power

Yes

Tacoma Power has the following comments regarding improvements to the standard: 1. *Regarding 4.2.6.1 and 4.2.6.2, there are some generating plants that may be in a different Balancing Authority area than the Transmission Owner with which they interconnect. This may complicate the determination of applicability of Automatic Reclosing under PRC-005-3. 2. Regarding 4.2.6.2, would it be necessary to maintain Automatic Reclosing components per

PRC-005-3 on BES Elements “facing” an applicable generating plant? For example, assume that a 5-circuit-mile long line connects Generating Plant A with Substation B. Would Automatic Reclosing components at Substation B on the connecting line need to be maintained per PRC-005-3? It seems unlikely that a failure of the Automatic Reclosing in this scenario would have adverse reliability impact to the BES. Of course, this assumes that there is not another generating plant within 10 circuit miles connected to Substation B. 3. Consider a substation located within 10 circuit miles of two or more generating plants, none of which individually applies under 4.2.6.1. Furthermore, assume that these generating plants collectively have a total installed generating plant capacity greater than the capacity of the largest generating unit within the Balancing Authority area? Would the substation apply to 4.2.6.2? 4. In 4.2.6.2, only Automatic Reclosing applied on BES Elements is applicable. What if there is a non-BES radial line connected to the substation? It seems that the reliability impact of improper Automatic Reclosing on this non-BES Element could be as high as that for improper Automatic Reclosing on a BES Element connected to the substation.

Yes

Kayleigh Wilkerson

Lincoln Electric System

No

LES is concerned with how components of a reclosing system would be identified if an automatic line isolation scheme is included within a reclosing scheme. For instance, in some configurations, if a trip were to occur on a transmission line, one reclose is performed. If the line immediately trips again (i.e., the fault is not cleared), the line is automatically isolated with a line switch followed by a second reclose. This is done in order to pick up the load on a transformer that may be on the same line terminal at the substation. However, in the event there is a failure of the line switch, the second reclose is cancelled. In consideration that this would affect reclosing, LES asks that the drafting team provide further clarification as to whether the components associated with the line switch operation would be included as part of the PSMP as well. Additionally, if reclosing is supervised by a sync-check function, whether included in the relay performing the reclosing or else in a separate relay, should that relay, and the voltage inputs needed to do sync-check, be included in the PSMP also? To ensure a consistent understanding amongst registered entities, LES recommends the drafting team add clarifying language to Applicability Section 4.2.6 or else provide further guidance within the Supplementary Reference and FAQ document.

Yes

Thomas Foltz

American Electric Power

No

It is not clear exactly which sort of automatic reclosing behavior(s) the proposed changes are attempting to prevent. Accidental reclosing? Failure to reclose? Providing clarity on this fundamental question will help industry in providing sound comments and feedback regarding PRC-005-3. Does mentioning "interlock circuits" in the second bullet under Automatic Reclosing (page 2 of redline) refer narrowly to circuitry inside breaker mechanisms or does it also include lockout strings associated with lockout relays?

No

We are concerned by the second bullet in the General Considerations section where it states "Whether each component has last been maintained according to PRC-005-2 (or the combined successor standard PRC-005-3), PRC-005-1b, PRC-008-0, PRC-011-0, PRC-017-0, or a combination thereof." This section implies obligations which reference standards outside of PRC-005-3 and including a standard which is not yet fully approved (PRC-005-02), essentially serving as Measures outside of the proposed standard. In addition, obligations have no place in an implementation plan if they are not also specified within the standard itself. This overall approach sets a bad precedent for the standards development process. AEP does not recommend basing an implementation date on a standard which has not been fully approved, as that could prove problematic if in this case PRC-005-2 fails to become fully approved by FERC but PRC-005-3 *is* approved. Ideally, we recommend that the implementation date be solely based on PRC-005-3. However, should the drafting team still wish to include PRC-005-2 in the implementation plan, perhaps it could instead state that "Unimplemented Protection System Component maintenance activities per PRC-005-2 will continue to be implemented in accordance with the PRC-005-2 implementation plan. In addition, the following Automatic Reclosing Component maintenance activities will be implemented as part of PRC-005-3..."

Pepco Holdings Inc & Affiliates

David Thorne

Pepco Holdings Inc

No

We agree with the reasoning behind NERC's System Analysis and Modeling Subcommittee (SAMS) recommendation to limit the applicability of automatic reclosing to only those installations that would impact the reliability of the BES. The three criteria (Sections 4.2.6.1, 4.6.2.2, and 4.6.2.3) identified in the PRC-005-3 draft and FAQ document seem reasonable and appropriate. However, additional clarification is needed to ensure uniform interpretation of these criteria. Consider the following scenario. Suppose a certain generating plant has 500 MVA of generation interconnected at a 230kV bus, 300 MVA interconnected at a 138kV bus, and 200 MVA interconnected at a 69kV bus. There are autotransformers connecting the 138kV bus to both the 230kV and 69kV busses. 1) How is total plant capacity to be calculated? Is it the sum of all generation capacity at the plant (500 + 300 + 200 = 1000 MVA), even though it is not all interconnected at the same bus, and some of it is connected below 100kV? Or, should the aggregate generation capacity interconnected on each bus be evaluated separately for those lines connected to that bus? Depending on the size of the autotransformers which interconnect the three busses, the transformer thru impedance could be comparable to, or

exceed, the equivalent impedance of 10 circuit miles of line. If this were the case, it would seem that evaluation of plant capacity should be permitted to be calculated on an individual bus basis, rather than a total plant basis. Also, can the 200 MVA of generation interconnected at the 69kV bus be excluded from the total plant capacity, since it is interconnected below 100kV, and therefore not BES generation? Section 4.2.6.1 should be re-worded to provide clarity and eliminate confusion on how to evaluate this plant capacity calculation. Also, specific examples illustrating how to apply this criterion would be helpful in the FAQ. 2) Section 4.2.6.1 states that it applies to “all BES elements at generating plant substations...”. The transmission line (including both ends) is considered a BES element. Therefore one might interpret this as applying to both ends of any BES element that terminates on a generating plant substation. We believe the intent of 4.2.6.1 is to only apply to the automatic reclosing schemes on the line terminals located at the generating station and to not apply to the automatic reclosing schemes on the opposite ends of the lines remote from the generating plant substation. Automatic reclosing schemes on lines terminating on generating stations usually employ a leader-follower philosophy, with the remote terminal programmed as the reclose initiate terminal, and the generating station end of the line reclosing only upon a successful restoration of the far end. A reclosing mal-function at the far terminal should have no consequences for the generating plant, provided there is no other electrically short (within 10 circuit miles) transmission path from the far terminal back to the generating plant. To provide clarity, Section 4.2.6.1 should be re-worded as follows: “Applied on the terminals of BES Elements located at generating plant substations...”. For consistency, Section 4.2.6.2 should also be re-worded as follows: “Applied on the terminals of BES Elements located at substations...”. Also, specific examples and clarifications in the FAQ would also be helpful. 3) For consistency, when determining plant capacity and capacity of the largest generating unit within the Balancing Authority Area, rated generator nameplate MVA ratings should be used rather than published seasonal MW values. 4) The NERC SAMS review concluded that automatic reclosing mal-performance affects BES reliability when “inadvertent reclosing near a generating station subjects the generation station to severe fault stresses”. The concern appears to be potential shaft torque damage, or instability, of rotating machines to automatic reclosing mal-performance. That being the case, generation sources that are not subject to severe fault stresses, such as inverter based generation, or static reactive sources (SVC’s, capacitor banks, etc.) should not be included in the calculation of total plant capacity. However, since synchronous condensers are subject to the same fault stresses as synchronous generators they should probably be included in the aggregate plant generation calculation, providing they are interconnected at 100kV, or above.

Yes

Brad Harris

CenterPoint Energy

No

The SAMS/SPCS study of automatic reclosing identifies 1 circuit-mile impedance as typically

adequate to prevent generating unit instability and that 10 circuit-miles impedance is a sufficient margin. CenterPoint Energy requests that the SDT reevaluate the technical basis for selecting 10 circuit-miles as “sufficient margin” and incorporating this distance into the Applicable Facilities section 4.2.6.2. Since the SAMS/SPCS study states that 1 circuit mile impedance is adequate, it is possible that 5 circuit-miles or some other distance will provide a sufficient margin.

Yes

SERC Protection and Controls Subcommittee

David Greene

SERC RRO

No

Under the Facilities Section, the drafting team included Footnote #1 which allows an exclusion of certain locations that meet the test criteria; however, there is no stated time frame to re-validate the results of stated test. We recommend that the drafting team specifies a re-validation period of 60 months.

Yes

Andrew Z. Pusztai

American Transmission Company

No

The PRC-005 standard is directed at the Transmission Owner (TO), not the Transmission Planner (TP). The TO may not have the ability to perform the analysis that is required to identify exclusions and ATC recommends that the SDT address this issue.

MRO NERC Standards Review Forum

Russ Mountjoy

MRO

Yes

The NSRF supports the draft standard PRC-005-3 addressing automatic reclosing as correct and appropriate.

Yes

Northeast Power Coordinating Council

Guy Zito

Northeast Power Coordinating Council

No

The maintenance for Automatic Reclosing installed on the lines defined at Section 4.2.1 should be done at the same time with the maintenance of Protection Systems installed on those lines. Similarly, the maintenance for Automatic Reclosing used as an integral part of a SPS defined in Section 4.2.4 should be done at the same time as the maintenance for a SPS. This should be reflected in this revision of the Standard. The Considerations for Maintenance and Testing of Autoreclosing Schemes report attached as a supporting document mentions as a credible failure “a close signal is issued with no delay or less delay than is intended”. This failure should be classified as either a normal contingency or an extreme contingency. The classification is important because the TPL standards define different study conditions based on contingency classifications. How are interconnections to be considered in Applicability Section 4.2.6 Automatic Reclosing? Section 4.2.6.1 states that Automatic Reclosing should be maintained “at generating plant substations where the total installed capacity is greater than the capacity of the largest generating unit within the Balancing Authority Area”. However, depending on the assumptions used for system configurations, there may be other locations where if the double three phase fault described in Footnote 1 is applied, the total generation loss could be greater than the largest unit within the Balancing Authority. Also, should the criteria be based on largest single source loss rather than largest generating unit? Otherwise, there is no mechanism that triggers review of applicability of this standard. For example, what if the largest generating unit within the BA Area is removed permanently from service? This is applicable in the Northeast, where TO and GO functions are performed by different entities/owners. The BA is the entity that determines the largest single source loss in its area; they would also be the proper functional entity to identify the generator locations in 4.2.6.1. The TPL or the BAL standards could then include a trigger mechanism to review applicability of 4.2.6 to GOs and TOs for a change in the largest single source loss criteria/limit. From a Registration Criteria perspective, the terms “unit” and “plant” as employed in the Registration Criteria suggest a two-part Applicability test. The first part is a comparison between the single “largest generating unit” and a larger multi-unit generating plant located at a single site (i.e., the term a “plant” as used in NERC Rules of Procedure, Appendix 5B NERC Statement of Compliance Registry Criteria). In this first part of the test the sum of the capacity ratings of the smaller individual units exceeds the single “largest generating unit” within the Balancing Authority Area. This is compared with a single “largest generating unit.” The second part of the Applicability test relates to the “generating plant substations.” In this phrase the word “substations” is plural. This plural wording suggests that the multi-unit generating plant feeds more than one substation. Suggest the following alternatives to the wording of Section 4.2.6.1: “Where generating plant substations are interconnected locally at the generating plant site, or adjacent to the generating plant site, and applied on BES Elements at the generating plant substations.” Or “Automatic Reclosing is applicable where the total site installed generating plant capacity is greater than the capacity of the largest generating unit within the Balancing Authority Area or when 4.2.6.3 applies.” Applicability Section 4.2.6.2 addresses the electrical and geographical proximity of the “generating plant substations” interconnections by stating “one bus away” and “less than 10 circuit-miles from the generating plant substation.” For

clarification, suggest revising Section 4.2.6.2 to read “Where generating plant substations are interconnected at a distance from the generating plant site, applied on BES Elements at substations located one bus away from generating plant substations when the substation is less than 10 circuit-miles from the generating plant substation.” What is the technical justification for the 10 circuit-miles? It may be necessary to confirm the 10 circuit miles with the Planning Coordinator. It is not clear if a substation “one bus away from generating plants” that meets the criteria in 4.2.6.2 and includes buses at two voltage levels, separated by a power transformer, is considered as one bus, or as two buses separated by a power transformer. If the former applies, reclosing relays on elements at only one of the substation buses would be included in this standard. If a reclosing relay is found non-functional during maintenance activity and has to be removed from service for an extended period of time, which in turn fully removes automatic reclosing functionality, is it still identified as an Unresolved Maintenance Issue? The final SAMS-SPCS report states that if “No close signal is issued under conditions that meet the intended design conditions, (...) this failure mode does not create any additional considerations for inclusion of autoreclosing relays in PRC-005”, which implies that it would not be identified as an Unresolved Maintenance Issue. Footnote 1 is not explicit as to the reclosing operation referred to. The Requirement appears to address only three pole, single shot reclosing. There is no reference to single pole reclosing or cases where multiple shot reclosing may be utilized. A more generalized statement should be considered: Automatic Reclosing addressed in Section 4.2.6.1 and 4.2.6.2 may be excluded if the equipment owner can demonstrate that, in the event of a close-in permanent fault, the reclosing utilized does not result in a total loss of generation in the Interconnection exceeding the largest unit within the Balancing Authority Area where the Automatic Reclosing is applied. Rationale should be provided to describe the system conditions to be considered for studying the three phase fault described in Footnote 1. Footnote 1 places the burden on the owner of the reclosing relays to demonstrate which reclosing relays can be excluded by making the determinations outlined in the footnote. This should be the role of the Reliability Coordinator or Planning Coordinator and not the equipment owner. Consequently, we believe that the applicability of this standard should be expanded to RCs and/or PCs in order to properly conduct the sort of studies asked for in the standard. Section 4.2.6.3 is not specific enough with regard to reclosing used in an SPS. The use of the word “integral part of an SPS” is subject to interpretation and may require details of the SPS that will not be readily available to the owner of the reclosing relays. There should be a process in place to update the list of the Automatic Reclosing excluded from being maintained. The standard must consider that neighboring entities may be involved in the lines being tested.

Yes

Hydro One Networks Inc.

Sasa Maljukan

Hydro One Networks Inc.

No

– We do not agree with Footnote 1 in the standard which places the onus on the equipment owner of the reclosing relays to demonstrate which reclosing relays can be excluded by making the determinations outlined in the footnote. This is clearly the role of the Reliability Coordinator or Planning Coordinator and not the equipment owner. Consequently, we believe that the applicability of this standard should be expanded to RCs and/or PCs in order to properly conduct the sort of studies asked for in the standard. – Also, the standard assumes that all relays are in scope and entities have to systematically exclude relays based on the footnote. We don't agree with this approach since it is onerous and leaves room for interpretations. We suggest that standard is changes so that the onus is placed on the RC or PC to identify such relays. – Section 4.2.6.3 is not specific enough in terms of in-scope reclosing used in an SPS. Use of the word “integral part of an SPS” is subject to interpretation and may require details of the SPS not readily available to the owner of the reclosing relays. – We propose that the maintenance for Automatic Reclosing installed on the lines defined at Section 4.2.1 should be done at the same time with the maintenance of Protection Systems installed on those lines. If the owner of the two relays is not the same, we recommend that the standard requires coordination between two entities. Similarly, the maintenance for Automatic Reclosing used as an integral part of a SPS defined in Section 4.2.4 should be done at the same time with the maintenance for SPS. The revision of the standard should only reflect these changes. Please see the rational below: The report attached as a supporting document mentions as a credible failure “a close signal is issued with no delay or less delay than is intended”. This failure should be classified as either a normal contingency or an extreme contingency. The classification is important because the TPL standards define different study conditions based on contingency classification. Sections 4.2.6.1 states that Automatic Reclosing should be maintained “at generating plants substations where the total installed capacity is greater than the capacity of the largest generating unit within the Balancing Authority”. However, depending on the assumptions (how the system is stressed, extreme weather, etc.) and specific configurations, there may be other locations, where if the double three phase fault described in the Footnote 1 is applied, the total generation loss could be greater than the largest unit within the Balancing Authorities. The standard lacks a common methodology for performing the double three phase fault described in the Footnote 1: – The standard does not specify the conditions (extreme weather base case, extreme contingencies base case, how the generators are dispatched, etc.) or what would be the time delay between the first and second fault. All these conditions may affect the total generation loss. – The 10 circuit-miles criteria should be confirmed with the Planning Coordinators. – Depending on the location of the line being tested, different neighboring entities may be involved. – There should be a process in place to update the list of the Automatic Reclosing excluded from being maintained.

Yes

Bill Fowler

City of Tallahassee

Yes
Anthony Jablonski
ReliabilityFirst
No
No, the reclosing relays in the Applicability section were overly restricted. Improper operation of reclosing relays can exacerbate fault conditions and severely damage equipment that affects the long term reliability of the Bulk Power System. The Applicability section limits the facilities concerning automatic reclosing to those integral to an SPS or substations (and those one bus away) where the total installed generating plant capacity is greater than the capacity of the largest generating unit within the Balancing Authority Area. This bar is so high that substations with units as high as 1200 MVA may not be covered by this revised standard. The capacity limit should either be removed or reduced to no more than half the largest generating unit within a BA. Also, the definition of Automatic Reclosing should include supervisory elements like synchronism check or dead-line check as these can be integral parts of the reclosing scheme.
No
No, the implementation plan has an excessively long phased in approach that stretches out to 13 years after regulatory approval or 14 years after NERC Board of Trustees adoption
Southern Company - Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Mississippi Power Company; Gulf Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing
Marcus Pelt
Southern Company Operations Compliance
Yes
Under the Facilities Section, the drafting team included Footnote #1 which allows an exclusion of certain locations that meet the test criteria; however, there is no stated time frame to re-validate the results of stated test. We recommend that the drafting team specifies a re-validation period.
Yes
Cole Brodine
Nebraska Public Power District
No
*4.2.6.1 – Is the largest generator included or excluded? Based on the definition, the largest generator is not larger than the largest generator, so it would not be included. *Confirm other input to Automatic reclosing Relays are NOT included (including but not limited to...): Synch check relays. Voltage sensing devices Please explain or clarify better what the SPS includes,

specifically what does “integral part” mean? Please explain what a minimum trip-close-trip time delay is and how this exclusion would work. Please clarify which circuitry is applicable. An example would be A/B contacts, are these included or not?

No

To implement, it would cause us to have to verify that the reclose actually works as part of the functional trip check. Otherwise, we have the breakers and relays already classified as NERC.

PPL Corporation NERC Registered Affiliates

Nicholas A. Poluch

PPL Generation, LLC on behalf of its Supply NERC Registered Entities

No

1) There are currently two NERC approved projects filed at FERC (PRC-005-1.1b and PRC-005-2). NERC should consider waiting to proceed with this project until the current projects are ruled on and FERC provides further direction. 2) For 4.2.6, for reclosing capability, it is unclear what functionality is to be tested. Please define. 3) For PRC-005-3 section 4.2.6.2, please provide the technical basis for this application of the Standard. Specifically, this application states for Automatic Reclosing: “Applied on BES Elements at substations one bus away from generating plants specified in section 4.2.6.1 when the substation is less than 10 circuit miles from the generating plant substation.” Please provide the technical basis/reasoning for the 10-mile criteria. At a recent North American Transmission Forum Workshop on Protection System Maintenance Program it was implied that the 10 mile rule is for cases where a generator has a short connection to another company’s substation. Please clarify if this is the case. 4) For PRC-005-3 section R1, consider adding the following language that is used for PRC-005-1.1b “each Generator Owner that owns a generation or generator interconnection Facility Protection System...” This is NERC-approved language that has been through the standards development process and has technical justification through Project 2010-07. 5) Please provide the technical basis for R1.1 which requires battery testing for DC Supply Component Type Protection Systems to be time based. 6) Table 1-2 of PRC-005-3 requires functional testing of non-monitored communication systems on a 4 month cycle. Please specify NERC’s criteria for the functional testing (what attributes to be tested). Additionally, specifically define monitoring criteria and data intervals for continuous monitoring of communications systems (to see if check back (fail/no fail) monitoring is adequate).

Yes

Oliver Burke

Entergy Services, Inc.

Yes

Entergy agrees with the inclusion of the reclosing relay maintenance requirement except for how the terminology is addressed. Entergy suggests not adding of the term Automatic Reclosing; instead add reclosing relay and the associated circuitry description under Protection

System definition.
Yes
Entergy agrees with the addition of table 4 except for the terminology Automatic Reclosing.
ISO RTO Council Standards Review Committee
Greg Campoli
NYISO
No
<p>The IRC members compliment the SDT in using the recommendations provided in the SAMS/SPCS Order 758 Autoreclosing Report for the applicability of this standard directive to specific reclosing relays. By using these recommendations, Transmission Owners are provided guidance and reduced burden that should satisfy the Commission conclusion in the Order that “specific requirements fo selection criteria should be used to identify reclosing relays that affect the reliability of the Bulk-Power System.” The IRC members are not directly impacted by the PRC-005 requirements from a compliance standpoint because we are generally not Transmission Owners. We are raising these questions to highlight the lack of communications between the stakeholder industry experts and the regulator directing technical requirements on the industry . As everyone in the industry knows, seven years’ experience with the ERO has caused significant burdens on meeting compliance requirements with numerous requirements being in effect and entities having to significantly increase resources in compliance and not always justifying whether such expenses are a benefit to the end consumer. NERC must develop processes and form relationships with the regulators who have these specific technical concerns to bring their concerns and issues to the industry experts in a more direct and efficient manner to avoid delays in standards development and approval and expending more resources in the regulatory process rather through a technical process. We question whether the approach the SDT has taken to address the FERC Directive in Order 758 addresses the core reliability concern that the Order seems to raise. First, the Order states that reclosing relays are not explicitly identified as part of the “Protection System” and if it plays a part in the “Protection System” to “achieve or meet system performance requirements” or “can exacerbate fault conditions when not properly maintained and coordinated” then there could be a gap in the maintenance and testing of the relays. Second the Order recognizes that certain parties in comments to the NOPR believe reclosing relays are used not for reliability reasons but for business purposes in restoration post-contingency. Further commenters stated that specific call outs for reclosing relays in PRC-005 are not necessary because reclosing relays are already integral to an entity’s relay maintenance program. Nevertheless, FERC has directed NERC to add reclosing relays to the standard There is no further technical justification for adding reclosing relays to the standards. The referenced language from the Order can be challenged by a protection system designer in that a reclosing relay may not be integral to “achieve or meet system performance requirements” nor “can exacerbate fault conditions” because they may have been designed to provide onlyrestoration of service for customer satisfaction and be in a part of the system that cannot exacerbate a fault condition (e.g. tap configuration). Does a registered entity subject to this requirement have the ability to</p>

demonstrate a particular reclosing relay does not meet the apparent reliability concern specified in the Order and exclude those reclosing relays from the compliance program? An all inclusive approach to apply the PRC-005 requirements for all reclosing relays may have little to no reliability benefit to the grid. In addition, we offer the following comments for the SDT's consideration to achieve consistency in the terms used and the precise devices that the revised standard should apply: a. Definition of PSMP: the term "Automatic Reclosing" should not be capitalized since it is indicated that the term is defined for use only within PRC-005-3, and should remain with the standard upon approval rather than being moved to the Glossary of Terms. With this term not to be balloted and included in the Glossary, it should be in lower case. b. Order 758 directed NERC to include "reclosing relays" that can affect the reliable operation of the Bulk-Power System. Automatic reclosing is an act or intent, not a device. It is the latter that needs to be maintained and tested for continued functionality, not the former. Therefore, we suggest that the term "Automatic Reclosing" be replaced with "reclosing devices" or "reclosing relays" in the revised PSMP definition, in Sections A.1, A.3 and A.4.2.6, and throughout the standard where "automatic reclosing" is addressed/referenced. c. We interpret the FERC directive to require not just the automatic reclosing devices/relays be included in PRC-005, but also the relays/devices that may be used for manual reclosing. In other words, both automatic and manual reclosing devices/relays need to be included in the standard. To enable this applicability, we suggest not removing the word "automatic" where it appears.

Yes

We agree with the proposed implementation plan, but suggest that the term "Automatic Reclosing" with "reclosing devices" or "reclosing relays" be applied throughout the Implementation Plan document (see out comments under Q1, above).

Duke Energy

Colby Bellville

Duke Energy

No

We believe the modifications to the PRC-005-2 Applicability section 4.2.6.1 should recognize that the reliability issue is inadvertent reclosing, and therefore applicability on BES Elements at generating plant substations should be limited to the timing and sync check functions of reclosing. There is no need to include all DC circuitry, etc. because if a problem existed aside from timing and sync check, it would just prevent reclosing. Also, rather than being focused only on plant capacity, there should be some recognition that plant location on the BES is also a consideration. Duke Energy believes the Applicability section 4.2.6.2 should be based on a technical assessment as illustrated in the SAMS/SPCS paper. This type of assessment should be based on a simulation of a close-in-three-phase fault for twice the normal clearing time. This simulation would capture a minimum trip-close time delay.

Yes

Kevin Luke

Georgia Transmission Organization
Agree
Michael Falvo
Independent Electricity System Operator
No
<p>Comments: We only agree with the scope presented in the SAR. We do not agree with the proposed changes, as stated below. We suggest that the maintenance for Automatic Reclosing installed on the lines defined at Section 4.2.1 could be done at the same time with the maintenance of Protection Systems installed on those lines. Similarly, the maintenance for Automatic Reclosing used as an integral part of a SPS defined in Section 4.2.4 could be done at the same time with the maintenance for SPS. Please see the rational below. The report attached as a supporting document mentions as a credible failure “a close signal is issued with no delay or less delay than is intended”. This failure should be classified as either a normal contingency or an extreme contingency, to be consistent with the TPL standards contingency classification. Section 4.2.6.1 states that Automatic Reclosing should be maintained “at generating plants substations where the total installed capacity is greater than the capacity of the largest generating unit within the Balancing Authority”. However, depending on the assumptions (how the system is stressed, extreme weather, etc.) and specific configurations, there may be other locations, where if the sequential three phase fault described in the Footnote 1 is applied, the total generation loss could be greater than the largest unit within the Balancing Authorities. The standard lacks a common methodology for testing sequential three phase faults described in the Footnote 1:</p> <ul style="list-style-type: none"> o The standard does not specify the conditions (extreme weather base case, extreme contingencies base case, how the generators are dispatched, etc.) or what would be the time delay between the first and second fault. All these conditions may affect the total generation loss. o The 10 circuit-miles criteria should be confirmed with the Planning Coordinators. o Depending on the location of the line being tested, different neighboring entities may be involved. o There should be a process in place to update the list of the Automatic Reclosing excluded from being maintained.
Yes
FirstEnergy
Larry Raczkowski
FirstEnergy Corp
No
<p>1. FE supports the technical aspects and requirements of the standard. 2. FE is questioning the accuracy of the red-lining in this document. Many of the definitions were reflected as “new” when in fact only minor changes were made. 3. FE also questions why the drafting team is proposing deletions in the Revision History of the standard. Complete and accurate revision</p>

history is information that needs to be retained for future reference.
Yes
FE agrees with the proposed Implementation Plan for V3.
Florida Municipal Power Agency
Frank Gaffney
Florida Municipal Power Agency
No
FMPA is generally supportive of the changes to the standard to accommodate Reclosing Relays as directed by FERC. We have one comment: The SDT should recognize that there are a number of small BAs and that the Applicability 4.2.6.1 would be better stated as the largest generator within the Reliability Coordinator area as opposed to the largest generator in the Balancing Authority area (e.g., for some BAs, the largest generator in their area is less than 10 MW and not even registered). If left unchanged, FMPA would recommend a Negative vote.
Yes
Jonathan Meyer
Idaho Power Company
Yes
Yes
ACES Standards Collaborators
Jason Marshall
ACES
No
(1) While we believe the standard should not be modified until FERC rules on version 2 of PRC-005, we appreciate that the drafting team adopted the recommendations of the Planning Committee in limiting the applicable reclosing relays to only those that may impact reliability. Limiting applicability to only those auto-reclosing relays that are close to large generating stations or that are applied as part of an SPS appears to fully meet the intent of the FERC directive. This limited applicability will help avoid the negative reliability impacts that would occur as a result of expanding applicability. If all auto-reclosing relays were included, the standard would detract resources away from reliability needs to unnecessary documentation. (2) We have a concern with the "Auto Reclosing" definition being proposed in this draft standard. Some parts of the definition may require further clarification and may be vague. What does "such as anti-pump and 'various' interlock circuits" mean? Will auditors and industry subject matter experts understand them in the same way? "Various" is not a clear

adjective to describe interlock circuits. We recommend revising the entire definition to clearly state the scope of the devices (possibly even the IEEE numbers). (3) There are concerns with the supplementary reference document because it assumes that PRC-005-2 will be approved by the Commission. This assumption is presumptuous and should not reflect any Commission rulings that have yet to occur. We recommend stating the current status of the PRC-005-2 project, which was filed with FERC in February 2013 and is pending the Commission's approval. Statements such as "PRC-005-2 'replaced' PRC-011" should be modified to "PRC-005-2 will replace PRC-011 upon approval from FERC," or something similar. (4) We suggest additional clarification may be needed for section 4.2.6.1 regarding applicability of auto-reclosing relays. This section states that the standard will apply to auto-reclosing relays implemented at the generating plant substation where installed generating plant capacity is greater than the largest generating unit in the BA. We presume this was selected because the largest generating unit is often the most severe single contingency and establishes the amount of contingency reserves that must be carried. If our assumption is correct, we would suggest that the applicability may need to be based on the largest resource in a Reserve Sharing Group (RSG) or BA. There is at least one large BA in the Eastern Interconnection where the largest resource is actually the loss of a 500-kV line that triggers a generation runback scheme. If a BA participates in an RSG, the BA would have access to contingency reserves that would be carried by the group and, thus, the only time a call for contingency reserves would exceed the amount carried would be when the generation loss is greater than the largest resource in the RSG.

No

(1) The SDT needs to clarify the implementation plan. The document is confusing because it focuses on the PRC-005-2 standard, which is not yet FERC-approved. As a result, this implementation plan is a moving target. Why not wait until PRC-005-2 gets approved before initiating another project for the same standard? This would reduce some of the timing issues and confusion. (2) Why is the drafting team revising a standard that has not been approved by the Commission yet? The second version was only filed in February 2013, and the timing of this project is premature. It is quite possible that the Commission could remand or direct revisions to parts of the standard and issue other directives associated with the version 2, which would then need to be addressed. This project is untimely and should be postponed until there is a final order from FERC. At that point, there may be justification to continue with this project, expand the scope of the SAR to address any new directives that may be included in a final order of PRC-005-2, or to determine that a guidance document is an appropriate way to satisfy the FERC orders. (3) Again, the drafting team needs to consider other methods of answering FERC directives. Not every directive needs to be addressed by developing or revising a standard. Adding reclosing relays to PRC-005 only complicates the most-violated non-CIP standard. There is enough concern about this standard already and the drafting team should consider alternative means to address the reclosing relay issue besides a standard revision. (4) This project contains similar timing issues as CIP version 4 and CIP version 5 because it is being developed prior to FERC issuing a final order on the previous version of the standard. The timing is problematic; registered entities will be forced to constantly be focusing on the next standard. The implementation plan should provide additional time, similar to PRC-005-2's two intervals, to allow registered entities enough time to adjust their PSMT programs for Protection

Systems, and then have additional time to adjust their PSMT plan and implement auto-reclosing relays. (5) Thank you for the opportunity to comment.

Scott Langston

City of Tallahassee

Yes

Bonneville Power Administration

Jamison Dye

Transmission Reliability Program

Yes

Yes