

**Individual or group. (36 Responses)**  
**Name (22 Responses)**  
**Organization (22 Responses)**  
**Group Name (14 Responses)**  
**Lead Contact (14 Responses)**  
**Question 1 (32 Responses)**  
**Question 1 Comments (34 Responses)**  
**Question 2 (32 Responses)**  
**Question 2 Comments (34 Responses)**  
**Question 3 (30 Responses)**  
**Question 3 Comments (34 Responses)**  
**Question 4 (28 Responses)**  
**Question 4 Comments (34 Responses)**  
**Question 5 (27 Responses)**  
**Question 5 Comments (34 Responses)**  
**Question 6 (30 Responses)**  
**Question 6 Comments (34 Responses)**

Individual
Heather Bowden
EDP Renewables North America LLC
No
For consistency, it should be considered to have PRC-004 and PRC-005 to be applicable at an aggregate of greater than or equal to 75 MVA of BES facilities.
No
For consistency, it should be considered to have PRC-004 and PRC-005 to be applicable at an aggregate of greater than or equal to 75 MVA of BES facilities.
No
For consistency, it should be considered to have PRC-004 and PRC-005 to be applicable at an aggregate of greater than or equal to 75 MVA of BES facilities.
Yes
Yes
Thank you for your time and efforts.
Individual
Jim Nail`
Independence Power & Light
Group
Northeast Power Coordinating Council
Guy Zito
Yes
Yes
Yes
Yes
Yes

No
Individual
Joe Butterfield
Wisconsin Public Service Corporation
No
The PRC-005-2(X) facilities sections (4.2.6 and 4.2.6.1) should be clarified and consistent with section 4.2.5. Suggested clarification: 4.2.6 Protection Systems for the following BES dispersed power producing resources identified through Inclusion I4 of the BES definition; excluding the individual resources: 4.2.6.1 Protection Systems that act to trip a common point of connection at 100 kV or above where those resources aggregate to greater than 75 MVA, either directly or via a lockout relay. OR 4.2.6.1 Protection Systems that act to trip dispersed power producing resources common point of connection at 100 kV or above where those resources aggregate to greater than 75 MVA, either directly or via lockout relay.
No
The PRC-005-3(X) facilities sections (4.2.6 and 4.2.6.1) should be clarified and consistent with section 4.2.5. Suggested clarification: 4.2.6 Protection Systems for the following BES dispersed power producing resources identified through Inclusion I4 of the BES definition; excluding the individual resources: 4.2.6.1 Protection Systems that act to trip a common point of connection at 100 kV or above where those resources aggregate to greater than 75 MVA, either directly or via a lockout relay. OR 4.2.6.1 Protection Systems that act to trip dispersed power producing resources common point of connection at 100 kV or above where those resources aggregate to greater than 75 MVA, either directly or via lockout relay.
No
The PRC-005-X(X) facilities sections (4.2.6 and 4.2.6.1) should be clarified and consistent with section 4.2.5. Suggested clarification: 4.2.6 Protection Systems for the following BES dispersed power producing resources identified through Inclusion I4 of the BES definition; excluding the individual resources: 4.2.6.1 Protection Systems that act to trip a common point of connection at 100 kV or above where those resources aggregate to greater than 75 MVA, either directly or via a lockout relay. OR 4.2.6.1 Protection Systems that act to trip dispersed power producing resources common point of connection at 100 kV or above where those resources aggregate to greater than 75 MVA, either directly or via lockout relay. In addition, there should be further clarification surrounding the inclusion/exclusion of the sudden pressure relay.
Yes
Yes
No
Group
Arizona Public Service Company
Janet Smith
Yes
Yes
Yes
Yes
Yes
Yes

No
Individual
Terry Volkmann
Volkman COnsulting, Inc
Yes
Yes
Yes
No
The change is neither consistent with the delineation in PRC-004 / 5 nor inclusive of the dispersed generation issue. My interpretation is that VAR-002 change only address change in reactive capability and does not address automatic voltage control and status at each generator site. VAR-002 should be written explicitly to only applicable at the point of aggregation to 75 MVA with the transmission system.
No
see question 4
No
Individual
John Seelke
Public Service Enterprise Group
No
In 4.2.6.1, "75MVA should be changed to "20MVA." This would make it comparable to I2 generators. Although the change to 20MVA would have this standard apply to non-BES assets, many standards do likewise. In fact "Protection Systems," which are the subject of this standard, are non-BES. As written, a reliability gap would be created between I4 generators and I2 generators. The proposed change violates Section 303 of the NERC Rules of Procedure, paragraph 1 that states: "Competition - A Reliability Standard shall not give any market participant an unfair competitive advantage." If alternative language was proposed that required the same 75MVA threshold for I2 generators, PSEG would be fine with that. But the proposed non-comparable treatment of generators is not acceptable.
No
The same comments in Q1 apply.
No
The same comments in Q1 apply.
No
How does one interpret the added "bullet" in R3? The new bullet statement belongs in the Applicability section. Furthermore, the statement creates a reliability gap between I4 generators and I2 generators. It also violates Section 303 of the NERC Rules of Procedure, paragraph 1 that states: "Competition - A Reliability Standard shall not give any market participant an unfair competitive advantage." We suggest the following addition to the bullet to correct both issues (added language is CAPITALIZED): "... Bulk Electric Definition; HOWEVER, REPORTING CHANGES ARE REQUIRED AT THE POINT THAT INDIVIDUAL INCLUSION I4 BES GENERATORS AGGREGATE TO GREATER THAN 20MVA."
No
The same comments in Q3 apply, except replace "R3" with "R4."
No

Individual
Anthony Jablonski
ReliabilityFirst
Yes
ReliabilityFirst submits the following comments for consideration: 1. VAR-002-2b(X) Requirement 3, Part 3.1 - The exclusion for dispersed power producing resources is shown as a bullet point and bullet points are historically described as "OR" statements in NERC Reliability Standards. ReliabilityFirst recommends adding the bulleted language to the end of Requirement 3, Part 3.1 as follows: "A status or capability change on any generator Reactive Power resource, including the status of each automatic voltage regulator and power system stabilizer and the expected duration of the change in status or capability. Reporting of status or capability changes is not applicable to the individual dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition."
Group
MRO NSRF
Joseph DePoorter
No
The proposed wording within the Applicability section of 4.2.5 is very wordy and without the Rational box for 4.2.5, entities will be very confused. The NSRF recommend that 4.2.5 be reworded to read; "Protection Systems for BES generation Facilities (Inclusion I4 assets are contained within section 4.2.6)". This will allow all BES connected generators to be covered by this Standard and clearly describes what is applicable per Inclusion I4 via 4.2.6.
No
See comments per question 1.
No
See comments per question 1.
No
The NSRF agrees with the proposed Requirements but has issues with the associated Rational for Footnote 5 in R4, Part 4.1, note that Transmission Provider should be Transmission Planner. The auxiliary transformers stated in R4.1 are usually transformers that provide station services to the generator. The first sentence of the Ration is correct. The second sentence is out of line since it is directed to the collector system (34.5kV), this should be deleted. This rewrite will provide simple clarity that the foot note is trying to provide.
No
The bulleted item under R4 is too wordy and recommend the following rewrite to provide clarity; "Reporting of reactive capability changes is not applicable to (delete "the") individual (delete "for ") dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition.
Yes
Please note that NERC has already written a proposed Guidance document on these Standards, including PRC-004. The NSRF, request that the SDT coordinate with NERC so that any Standard and Guidance document complement each other.
Individual
Thomas Foltz
American Electric Power
Yes

Yes
Yes
Was the omission of sudden pressure relays for dispersed generation resources under PRC-005-X Applicability 4.2.6 intentional? In light of the FERC directive associated with SPRs, we are unsure if FERC will accept a version of the standard that does not require testing of SPRs for transformers connected between the point that the resources aggregate to greater than 75 MVA and the point of interconnection.
Yes
Yes
No
Individual
Jo-Anne Ross
Manitoba Hydro
Yes
Yes
Yes
Yes
Yes
No
Individual
Si Truc PHAN
Hydro-Quebec TransEnergie
No
In Quebec, the RTP (Main Transmission System) Elements are applied instead of BES Elements. The Generation Facilities are greater than 50 MVA / 44kV instead of 75 MVA. Also in Quebec, NO Dispersed Generation is connected into the RTP network. To facilitate the compliance, the expression 'inclusion I4' should NOT include in the standard.
No
See response in question 1
No
See response in question 1
No
See response in question 1
No
Group
Dominion
Connie Lowe

No
Dominion recommends revising 4.2.5 to read "Protection Systems for the following BES generator Facilities identified through Inclusions I2 and I3 of the BES definition:" as we believe it is more appropriate to cite how these BES generators are included under this section as opposed to indicating how they are not applicable under this section. Currently the standard's applicability is based first on the NERC Registration Criteria and secondly on facilities identified within the standard (4.2.5 Protection Systems for generator Facilities), regardless of their BES status. This proposed revisions means to change the applicability of the standard first to the NERC Registration Criteria and secondly on facilities identified within the standard (4.2.5 Protection Systems for BES generator Facilities). This BES generator Facilities change in 4.2.5 (i.e. Inclusions I2 and I3) essentially means the Protection System to be considered now is the "generator including the generator terminals through the high-side of the step-up transformer" and no longer considers protection to the point of interconnection.
No
Dominion recommends revising 4.2.5 to read "Protection Systems for the following BES generator Facilities identified through Inclusions I2 and I3 of the BES definition:" as we believe it is more appropriate to cite how these BES generators are included under this section as opposed to indicating how they are not applicable under this section.
No
Dominion recommends revising 4.2.5 to read "Protection Systems for the following BES generator Facilities identified through Inclusions I2 and I3 of the BES definition:" as we believe it is more appropriate to cite how these BES generators are included under this section as opposed to indicating how they are not applicable under this section.
Yes
Rationale for R4, need to change Transmission Provider to 'Transmission Planner'. Since this standard is being revised, Dominion suggests that NERC request the SDT to re-align the Measures with the Requirements to develop a more risk-based standard as NERC has proposed going forward.
Yes
Rationale for R5, need to change Transmission Provider to 'Transmission Planner'.
Yes
Dominion, from a philosophical perspective, cannot support a continent-wide standard (VAR-002) that does not grant a waiver (or waivers) where one or more approved regional standard exists. We cite the following as reason supporting this philosophy; PRC-006, Docket # RM11-20 - In Order No. 763 (issued on May 7, 2012), the Commission directed NERC to submit a Compliance Filing regarding several aspects including how it will address the Commission's directive to establish a schedule by the planning coordinator to comply with PRC-006-1 Requirement R9. In its compliance filing, NERC stated that an entity must be compliant with both the continent wide PRC-006 Standard and the regional standard proposed by SERC in Docket No. RM12-9. Dominion intervened requesting that the Commission modify Requirement R6 to require each UFLS entity in the SERC Region to implement changes to the UFLS scheme within the lesser of 18 months of notification by the planning coordinator, or the schedule established by the planning coordinator. In reply to SERC's responsive comments, Dominion disagrees that its concerns have been adequately addressed. Dominion states that "it is unjust to hold a registered entity responsible for compliance to any requirement within a reliability standard where such compliance is dependent upon that registered entity having also read, and taken into consideration, all statements issued by FERC, NERC and the Regional Entity. The Commission declined Dominion's request and instead affirmed the interpretation as set forth in NERC and SERC's comments. PRC-002-2 – NPCC received approval of its regional standard (PRC-002-NPCC-01) in October 2011. That standard also contained an implementation plan which provides staggered effective dates, i.e., the date on which applicable entities are subject to mandatory compliance, with full compliance required within four years of regulatory approval. During the comment period, Dominion stated potential for conflict between the approved regional standard and the draft continent-wide standard, and also noted that registered entities in that region are 2 years into the 4 year implementation which creates uncertainty for NPCC applicable entities. The drafting team's response did not adequately address Dominion's concerns. Dominion does not agree with the response provided by the SDT relative to comments related to PRC-006, specifically the regional (NPCC and SERC) versions. Both of these approved regional standards apply to

Generator Owner and we therefore agree that the SDT should include the continent wide standard in its review.
Group
Duke energy
Michael Lowman
Yes
Yes
Yes
Yes
Duke Energy suggests the following revision: "Reporting of status or capability changes is not applicable to the individual dispersed power producing resources identified through Inclusion I4 (a) of the Bulk Electric System definition." We believe the addition of "I4 (a)" helps clarify the applicability for individual dispersed power producing resources.
Yes
Duke Energy suggests the following revision: "Reporting of reactive capability changes is not applicable to the individual dispersed power producing resources identified through Inclusion I4 (a) of the Bulk Electric System definition." We believe the addition of "I4 (a)" helps clarify the applicability for individual dispersed power producing resources. We would also like to point out an apparent typo in R4 and suggest modifying "individual for dispersed power producing resources" to "individual dispersed power producing resources". The removal of "for" provides consistency with the language in VAR-002-2b.
Yes
PRC-005 Implementation Plans: We suggest removing "first day following" in all the PRC-005 implementation plans. It appears that as written, there could be a gap between the effective date and retirement date of these standards. VAR-002-2b RSAW : We suggest adding I4 (a) to the R3 Note To Auditor Section of the RSAW for consistency with our comments to Question 4 as follows: "Requirement R3.1 is not applicable to individual dispersed power producing resources identified through Inclusion I4 (a) of the Bulk Electric System definition. Entity assertions regarding applicability of Requirement R3.1 should be supported by evidence such as one-line diagrams, nameplate ratings, manufacturer information, or BES inclusion documentation available at the Regional Entity." VAR-002-3 RSAW : We suggest adding I4 (a) to the R4 Note To Auditor Section of the RSAW with our comments to Question 5 as follows: "Requirement R4 is not applicable to the individual dispersed power producing resources identified through Inclusion I4 (a) of the Bulk Electric System definition. Entity assertions regarding applicability of Requirement R4 should be supported by evidence such as one-line diagrams, nameplate ratings, manufacturer information, commissioning tests, etc."
Individual
Timothy Brown
Idaho Power
No
Inclusion I4 of the BES definition specifically includes each generating resource. It is inconsistent to not include them for testing the protection systems under PRC-005. As written, there would be portions of the Bulk Electric System that would not be required to have the protection systems tested. A GO with a plant of small units aggregating above 75 MVA would be required to test the protection systems on all their units. How is this equitable? I understand that you have addressed this issue in the Consideration of Comments for the White Paper (Pg 9 & 10), however I disagree with your conclusion. If they individual resources are insignificant to test, they why are they considered part of the BES?
No
See discussion in #1.

No
See discussion in #1.
Yes
Yes
Individual
Karin Schweitzer
Texas Reliability Entity
Yes
Yes
Yes
Yes
Yes
Yes
1)Texas RE agrees with the change to applicability but points out that there may be an error in the language of R5 of VAR-002-4. Requirement 4 and 5 have the exact same requirement language: "Each Generator Operator shall notify its associated Transmission Operator within 30 minutes of becoming aware of a change in reactive capability due to factors other than a status change described in Requirement R3. If the capability has been restored within 30 minutes of the Generator Operator becoming aware of such change, then the Generator Operator is not required to notify the Transmission Operator of the change in reactive capability." Requirement 5 goes on to add: "For generator step-up transformers and auxiliary transformers5 with primary voltages equal to or greater than the generator terminal voltage: 5.1.1. Tap settings. 5.1.2. Available fixed tap ranges. 5.1.3. Impedance data. The requirements in VAR-002-2b (R4) and VAR-002-3 (R5) that include the tap settings, ranges and impedance data language have the following requirement language: "The Generator Owner shall provide the following to its associated Transmission Operator and Transmission Planner within 30 calendar days of a request." Texas RE requests the SDT review the language to assure the correct requirement language is included in Requirement R5 of VAR-002-4. 2)It appears that R7 of VAR-002-4 should actually be the Measure for R6, not a Requirement. 3)It appears that VAR-002-2b(X) Requirement R3.1 and VAR-002-4 Requirement R4 map to each other but the exclusion language is slightly different. VAR-002-4, R4 has the word "for" between "individual" and "dispersed power" whereas VAR-002-2b(X) does not. The addition of the word makes the requirement confusing. It may just be a typo but Texas RE wanted to bring this to the attention of the SDT. VAR-002 -2b(X) Requirement R3.1 language: Reporting of status or capability changes is not applicable to the individual dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition. VAR-002-4 Requirement R4 language: Reporting of reactive capability changes is not applicable to the individual for dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition.
No
Group
DTE Electric
Kathleen Black
Yes
Yes



Yes
Yes
Yes
No
Group
FirstEnergy
Cindy Stewart
No
FirstEnergy abstains as we are not directly impacted by this project. Please see our response to Question #6.
No
FirstEnergy abstains as we are not directly impacted by this project. Please see our response to Question #6.
No
FirstEnergy abstains as we are not directly impacted by this project. Please see our response to Question #6.
No
FirstEnergy abstains as we are not directly impacted by this project. Please see our response to Question #6.
No
FirstEnergy abstains as we are not directly impacted by this project. Please see our response to Question #6.
Yes
FirstEnergy abstains as we are not directly impacted by this project. We question the efficiency of modifying several NERC Reliability Standards in lieu of potentially adjusting the NERC BES definition which may more effectively address the concerns. Additionally there are other revisions to the NERC BES definition needed in regard to generation assets. As written, there is inequality in the NERC BES definition for traditional generation resources versus dispersed generation. A single traditional unit of 25 MVA must meet all NERC Reliability Standards that apply to Generator Owners yet for the dispersed generation they are only subject to the extent that they total 75 MVA or more. When there are standards before FERC pending regulatory approval, all subsequent revisions should be based on the latest NERC Board approved version. It is our opinion that the approach taken to modify and post for ballot several versions of the same standard is inefficient, overly complicated and unnecessarily causes industry confusion. We suggest that the NERC Standards Committee reassess the need to make this a standalone project and work the intended revisions into current ongoing projects.
Individual
David Jendras
Ameren
Yes
Ameren adopts the SERC PCS comments by reference
Yes
Ameren adopts the SERC PCS comments by reference
Yes
Ameren adopts the SERC PCS comments by reference
Yes

No
(1) Regarding proposed standard VAR-002-4, we believe that some language is missing for requirement R5.1. Shouldn't the requirement state that the Generator Operator needs to provide the information on Tap Settings, Available fixed tap ranges, and Impedance data to the Transmission Operator? (2) We believe that VAR-002-4 should include a 30 day time period to complete R5, as alluded to in M5.
No
Group
SERC Protection and Controls Subcommittee
David Greene
Yes
Please word the standard to clearly identify that PRC-005 becomes applicable on facilities where the aggregate generation sums to > 75MVA and it connects at >100kV. Please refer to Figures in the BES Definition Reference document to clearly identify the applicable facilities where the aggregate generation sums to > 75MVA and it connects at >100kV. For example in the BES Definition Reference Document Figures I4-1 through I4-4, is the protection system on the blue bus in the purple circle included given that the green feeders are not BES? Or, is just the transformer protection applicable since it is clearly all blue (BES) in the diagram? As another example in the BES Definition Reference Document Figure I4-1, can each of the 4 green strings of distributed generation be owned by the same or different companies, located at one or separate locations and the blue collector bus actually be a sub transmission line (or distribution line)?
Yes
See comments with Question 1.
Yes
See comments with Question 1.
no comment
no comment
No
The comments expressed herein represent a consensus of the views of the above-named members of the SERC EC Protection and Control Subcommittee only and should not be construed as the position of SERC Reliability Corporation, its board, or its officers.
Group
Florida Municipal Power Agency
Carol Chinn
Yes
Yes
Yes
In the rationale for Footnote 5 in Requirement R4, Part 4.1 the references to Transmission Provider should be Transmission Planner. The reference to "Transmission" should be Transmission Planner.
In the added bullet to R4, the word "for" should be deleted. In the rationale for Footnote 5 in Requirement R5, Part 5.1 the references to Transmission Provider should be deleted. The reference to "Transmission" should be deleted. Although not in the scope of this particular SDT, the reference to Transmission Planner in M5 should be deleted since notification is not required by R5.
No
Group
SPP Standards Review Group

Robert Rhodes
No
Rewrite the 1st line under Description of Current Draft to read: 'This version of PRC-005 contains revisions to the applicability of the Standard intended to...' This eliminates the redline typo. In order to minimize confusion regarding the use of the term 'Facilities' versus 'facilities' in the Applicability Section, we recommend changing the heading of 4.2 to 'Applicable facilities'. Insert a space between the 'apply' and the 'only' in the 6th line of the Rationale Box for 4.2.6. Also expand the box down to capture all of the last line. We also suggest that the formatting in 4.2.6 parallel the formatting, or construction, of 4.2.5 in that specifics are listed in 4.2.5 and they are absent in 4.2.6. Or the drafting team could go in the other direction and modify 4.2.5 to match 4.2.6. The redline version contained several Rationale Boxes which are missing from the clean version. Were the boxes holdovers from previous versions making the clean version the correct copy or were they supposed to be included in the clean version?
No
In order to minimize confusion regarding the use of the term 'Facilities' versus 'facilities' in the Applicability Section, we recommend changing the heading of 4.2 to 'Applicable facilities'. We also suggest that the formatting in 4.2.6 parallel the formatting, or construction, of 4.2.5 in that specifics are listed in 4.2.5 and they are absent in 4.2.6. Or the drafting team could go in the other direction and modify 4.2.5 to match 4.2.6.
No
Shouldn't the reference to PRC-005-3 in the 2nd line under the Description of Current Draft be to PRC-005-4? The redline version shows a Rationale Box with the Introduction Section. This box, even though it contains redline changes, is not included in the clean version. Were the redline changes holdovers from a previous version and should not have been shown in this redline or were they supposed to be included in the clean version? In order to minimize confusion regarding the use of the term 'Facilities' versus 'facilities' in the Applicability Section, we recommend changing the heading of 4.2 to 'Applicable facilities'. The page header includes the PRC-005-4(X) label while within the standard itself it is shown as PRC-005-X. Which is correct? We would also suggest that the formatting in 4.2.6 parallel the formatting, or construction, of 4.2.5 in that specifics are listed in 4.2.5 and they are absent in 4.2.6. Or the drafting team could go in the other direction and modify 4.2.5 to match 4.2.6. The Rationale Boxes for 4.2.5 and 4.2.6 cover-up text. The boxes need to be moved such that they do not cover-up any text.
No
References to R4 and R5 in the Description of Current Draft Section should be to R3 and R4. Also delete the BES in front of Bulk Electric Systems in the line in which the references are made. The proposed change to Requirement R3, Part 3.1 is okay as long as the number of individual units in an aggregated site is not detrimental to the overall operation of the entire site. In that case, the site status, for the entire aggregated facility, should be reported. If this is the intent of Part 3.2, it needs additional clarification to make it stand out. The Rationale Box for Footnote 5 references the Transmission Provider and in one instance only references Transmission. We believe these references should be to the Transmission Planner as indicated in Requirement R4.
No
Since VAR-002-4 only contains minor technical revisions dealing with the applicability specifically for Requirements R4 and R5, is it feasible to believe that VAR-002-4 will be approved before VAR-002-3? The special provisions for 'the later of' aren't needed. Simply go with the normal Effective Date language. Additionally, the way this section is currently worded in those jurisdictions requiring governmental approval, the standard becomes effective immediately upon governmental approval. Yet, if governmental approval is not required, the standard would become effective the first day of the first calendar quarter following NERC Board approval. The concept of 'the first day of the first calendar quarter following approval' needs to be added to the governmental approval clause. The same argument applies to the proposed change for Requirement R4 as we put forth in response to the proposed change to Requirement R3, Part 3.1 in VAR-002-2b(X) in Question 4. The proposal is okay provided that only lost capability of a few individual units does not detract from the overall capability of the entire aggregated site. If the capability of the entire site is degraded the notification should be made. Also, insert the term 'generator' between 'individual' and 'for' in the bullet under Requirement R4. Requirement R5 is a duplicate of Requirement R4 and needs to be replaced with

the correct wording from VAR-002-2b(X), Requirement R4. The clean version is missing the Rationale Box for Footnote 5.
Yes
The various Implementation Plans for each version of PRC-005 are cross referenced in the Implementation Plans for PRC-005-2(X), PRC-005-3(X) and PRC-005-X(X) in this project. We suggest a change in language to an item in the Background Section of each of those referenced Implementation Plans. We propose the following: '2. For entities not presently performing a maintenance activity or using longer intervals than the maximum allowable intervals established in the proposed standard, it is unrealistic for those entities to be immediately compliant with the new activities or intervals. Further, entities should be allowed to become compliant in such a way as to facilitate a continuing maintenance program. Those entities which now fall under the requirements of the standard due to BES definition changes would have twenty-four months from the applicable effective date to demonstrate compliance.' This would eliminate the potential for a repeat of the fiasco of a few years back associated with implementation of PRC-005-1 in which evidence of compliance was required prior to the effective date of the standard. There is inconsistency among the proposed standards on the term dispersed power producing facilities. In some instances power producing is hyphenated, in others it is not. In some instances facilities is capitalized, in others it is not. The SDT needs to determine which is correct and stick to it. There is inconsistency among the proposed standards on the use of the terms 75 MVA and 100 kV. In some instances they are shown with the space and in others they are shown without the space as 75MVA and 100kV. The SDT, again, needs to determine which is correct and stick to it.
Individual
John Pearson
ISO New England
No
Under the standard, a conventional generating resource has to have a documented protection maintenance program which it must follow to ensure reliability. On the other hand, under the proposed revisions to the standard, a similarly-sized, dispersed power producing resource would not be required to do the same. If the standard is not applied to the dispersed generation resource, then there is no required protection maintenance, which can (and does in practice) result in more frequent trips, and degraded reliability. Loss of the dispersed generation resource (as distinct from individual units) would have the same impact as loss of a single, similarly sized conventional generating resource. Thus, a maintenance program that applies beyond the common point of connection should be required. The maintenance program should definitely be tailored to the type of dispersed generation power producing resource as determined by the GO/GOP, but having no requirement in place does not ensure reliable operations.
No
See response for Question 1
No
See response for Question 1
Yes
In PRC-005-2(X), under A.2, the number "2" should not have been deleted and the letter "X" should be in parenthesis as it is shown in the header. In PRC-005-2(X), and VAR-002-2b(X), under D. Compliance 1.1 – It is not necessary to repeat the definition of Compliance Enforcement Authority. A reference to the NERC Rules of Procedure is sufficient. The benefit is that, if the definition ever changes there, it will not have to be changed here. Therefore, 1.1 under Compliance should simply say: "Compliance Enforcement Authority" has the meaning ascribed to it in the NERC Rules of Procedure.
Individual
John Robertson
First Wind
Yes

Applicability is adequate for reliability.
Yes
Applicability is adequate for reliability.
Yes
Applicability is adequate for reliability.
Yes
Yes
No
Individual
George Brown
Acciona Energy North America Corporation
Yes
Yes
Yes
Yes
No
I agree with the intent of the SDT, however, the balloted version VAR-002-4 is incorrect. VAR-002-4 R4: added applicability clause is incorrect and misworded VAR-002-4 R5: Requirement is incorrect and not original requirement from version 3 of this standard
No
Individual
Israel Beasley
Georgia Transmission Corporation
Yes
Yes
The only comments I would suggest are fixing the wording in the Automatic Reclosing section 4.2.7.2 of PRC-005-3/PRC-005-X to refer to section 4.2.7.1 instead of 4.2.6.1. It appears this change was simply overlooked.
Yes
The only comments I would suggest are fixing the wording in the Automatic Reclosing section 4.2.7.2 of PRC-005-3/PRC-005-X to refer to section 4.2.7.1 instead of 4.2.6.1. It appears this change was simply overlooked.
Yes
The only comments I would suggest are fixing the wording in the Automatic Reclosing section 4.2.7.2 of PRC-005-3/PRC-005-X to refer to section 4.2.7.1 instead of 4.2.6.1. It appears this change was simply overlooked.
Group
IRC Standards Review Committee
Greg Campoli

Yes
Yes
Yes
The proposed change to Requirement R3, Part 3.1 is okay as long as the net change to number of the individual units in an aggregated site is not detrimental to affect the overall operation of the entire site or the proper management and control of reactive resources of the site. In that case, the site status, for the entire aggregated facility, should be reported. If this is the intent of Part 3.2 is intended to cover the latter situation (where the impact of changes to individual disperse generating sources is reported at the aggregate level), then Part 3.2 needs , it needs additional to be expanded to clarify it. clarification to make it stand out. Otherwise, the impact of changes to individual units will not be identified and reported for control to meet the objective of control and management of reactive resources. The Rationale Box for Footnote 5 references the Transmission Provider and in one instance only references Transmission. We believe these references should be to the Transmission Planner as indicated in Requirement R4.
Yes
There are multiple postings of the PRC-005 currently underway, each effort addressing different changes. Although we support and understand the need to adhere to the standards development process for standards projects, each one will have individual postings and ballots. This makes it cumbersome to reference and review layers of changes that may impact the other postings and can lead to confusion and unanticipated voting outcomes. The drafting teams need to explain how each proposed change to PRC-005 is not relevant or impactful on the other.
Individual
Joshua Andersen
Salt River Project
Yes
Yes
No
Sudden pressure relays are not "necessary", in fact, older transformers will likely not have them. What is necessary for "reliable operation" as defined in the statute are the differential relays, overcurrent relays, etc., that are there to clear a major phase to phase or phase to ground fault that if left uncleared can cause instability. A sudden pressure relay is there primarily for equipment health monitoring, e.g., detecting a turn-to-turn failure, not a phase to ground or phase to phase fault. If a sudden pressure relay fails to operate, there is no threat to BPS reliability since the differential relay / overcurrent relays are there if the fault develops into a major phase to ground or phase to phase fault.
Yes
Yes
No
Group
ACES Standards Collaborators
Jason Marshall
Yes
We agree with the changes.

Yes
We agree with the changes.
Yes
We agree with the changes.
Yes
(1) We agree with the proposed changes. However, we believe additional changes are needed to the standard. (2) Requirement R1 needs to be modified as well. Because each individual generating unit of a dispersed generation site that exceeds the 75 MVA threshold is included as part of the BES, R1 would apply and would require each of these units to be operated with AVR in voltage regulating mode. These units usually do not have an AVR and are not capable of controlling voltage. Rather, they rely on other voltage regulating equipment such as SVC or capacitor banks to control voltage at the interconnecting point. Thus, we request that R1 is modified so that is not applicable to the individual units of the dispersed power producing resources. (3) Similar to R1, R2 should also be modified to reflect that these dispersed generation resources often do not have AVRs and must rely on other voltage regulating equipment to control voltage at the interconnecting point. Thus, we request that R2 is modified so that is not applicable to the individual units of the dispersed power producing resources.
Yes
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No
Individual
Steven Lancaster
BES
Group
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Southern Company Generation, Southern Company Generation and Energy Marketing
Pamela Hunter
Yes
The drafting team has identified the appropriate aggregation point for dispersed power producing resources.
Yes
The drafting team has identified the appropriate aggregation point for dispersed power producing resources.
The drafting team has identified the appropriate aggregation point for dispersed power producing resources.
Yes
Yes
No

Individual
Spencer
Tacke
No
For all three PRC-005 proposed modifications, I think we still need to replace the 75 MVA generator size requirement with the 20 MVA size requirement, for the following reasons: WECC requires dynamic model verification for all units 20 MVA or larger connected at voltages 60 kV and above. This is because WECC members have learned over the years to recognize the significant role that smaller size generators play in system response and stability. Also, the WECC MVWG (Modeling and Validation Work Group) is currently performing a study to determine what is the minimum size generator for which model testing and verification needs to be completed. Also, within the next few years, there will be thousands of MWs of PV solar plants on-line in Central California, a large percentage of which will be small, 20 MW plants. We see about 2,500 MW of 20 MW PV units in the queue for the SGIP, SGIP-TC, WDAT, Clusters 1&2, and Clusters 3&4 in California, all coming on-line between now and 2018. Also, past WECC studies over the years of major outages have shown that generators, and indeed loads, below 100 kV, have played a major role in the impact of outages. In fact, the most accurate duplication of the August 1996 outage, and more recent outages that the WECC MVWG has simulated, have shown that the accuracy of the simulated results of actual system outages is highly affected by the accuracy of the modeled system below 100 kV.
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No
For both VAR-002 proposed modifications, I don't think we should state non-applicability of the Standard for dispersed generation resources identified through Inclusion 14 of the BES definition, for the following reasons: WECC requires dynamic model verification for all units 20 MVA or larger connected at voltages 60 kV and above. This is because WECC members have learned over the



years to recognize the significant role that smaller size generators play in system response and stability. Also, the WECC MVWG (Modeling and Validation Work Group) is currently performing a study to determine what is the minimum size generator for which model testing and verification needs to be completed. Also, within the next few years, there will be thousands of MWs of PV solar plants on-line in Central California, a large percentage of which will be small, 20 MW plants. We see about 2,500 MW of 20 MW PV units in the queue for the SGIP, SGIP-TC, WDAT, Clusters 1&2, and Clusters 3&4 in California, all coming on-line between now and 2018. Also, past WECC studies over the years of major outages have shown that generators, and indeed loads, below 100 kV, have played a major role in the impact of outages. In fact, the most accurate duplication of the August 1996 outage, and more recent outages that the WECC MVWG has simulated, have shown that the accuracy of the simulated results of actual system outages is highly affected by the accuracy of the modeled system below 100 kV.

No

For both VAR-002 proposed modifications, I don't think we should state non-applicability of the Standard for dispersed generation resources indentified through Inclusion I4 of the BES definition, for the following reasons: WECC requires dynamic model verification for all units 20 MVA or larger connected at voltages 60 kV and above. This is because WECC members have learned over the years to recognize the significant role that smaller size generators play in system response and stability. Also, the WECC MVWG (Modeling and Validation Work Group) is currently performing a study to determine what is the minimum size generator for which model testing and verification needs to be completed. Also, within the next few years, there will be thousands of MWs of PV solar plants on-line in Central California, a large percentage of which will be small, 20 MW plants. We see about 2,500 MW of 20 MW PV units in the queue for the SGIP, SGIP-TC, WDAT, Clusters 1&2, and Clusters 3&4 in California, all coming on-line between now and 2018. Also, past WECC studies over the years of major outages have shown that generators, and indeed loads, below 100 kV, have played a major role in the impact of outages. In fact, the most accurate duplication of the August 1996 outage, and more recent outages that the WECC MVWG has simulated, have shown that the accuracy of the simulated results of actual system outages is highly affected by the accuracy of the modeled system below 100 kV.

No

Individual

Sergio Banuelos

Tri-State Generation and Transmission Association, Inc.

Yes

4.2.5 is written strangely. "Protection Systems for the following BES generator Facilities not identified through Inclusion I4 of the BES definition" reads better.

Yes

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Yes

4.2.5 is written strangely. "Protection Systems for the following BES generator Facilities not identified through Inclusion I4 of the BES definition" reads better.

Yes

Yes

"R7" should be "M6". The effective date is confusing as written and makes it seem as if the standard would be effective immediately. Was that the SDT's intentions? Since VAR-002-3 is still waiting on FERC approval and is not effective yet the industry should have some time to prepare for VAR-002-4.

No

Individual

Michael Moltane

ITC
Yes
Regarding VAR-002, ITC makes the following comments: The Standard should define dispersed power producing resource. While in a practical sense this is a facility comprised of wind turbines or PV inverters, offering exclusions from Requirements based on an undefined criteria is not a good practice. R4 – ITC recommends removal of the sub-bullet under R4 excluding the generators identified through Inclusion I4. The exclusion using BES I4 is confusing and may conflict with existing standard VAR-001-4. A non-BES unit or several non-BES units combined together could have an impact on the BES and thus removing the generators from VAR-002-4 R4 solely based on Inclusion I4 may be detrimental to reliability. Per VAR-001-4 R4, the TOP is required to specify criteria that will exempt generators from following a voltage or reactive power schedule and associated notification requirements. Therefore, ITC recommends that VAR-002-3 R4 should be reworded as “Unless exempted by the Transmission Operator, each Generator Operator shall notify its associated Transmission Operator within 30 minutes of becoming aware of a change in reactive capability due to factors other than a status change described in Requirement 3”. The TOP can determine what notifications are necessary and be more specific depending on the needs of the system or individual facility. For example, a TOP exemption criteria may contain: “Dispersed power producing facilities are exempt from reactive capability change notifications less than 10% of the total aggregate lagging reactive capability as measured at the POI at nominal voltage”. TOPs typically will not want to receive individual turbine outage notifications; however, there may be instances where a dispersed power producing resource could lose an individual unit that may affect reliable operations (i.e. large individual units). In addition, the sub-bullet language in VAR-002-4 may be interpreted such that generators not in BES are exempt from reactive capability notifications and, in turn, exempt from following schedules which may be in conflict with VAR-001-4 and potentially impact the reliability of the BES. VAR-001-4 requires the TOP to determine the exemption criteria for generators and ITC recommends that VAR-002-4 be consistent with this practice as the TOP may require non-BES generators to follow a voltage or reactive power schedule based on the collective impact to the BES. R5 – The language in VAR-002-4 R5 is a repeat of the VAR-002-4 R4 language and does not correspond to sub-requirement R5.1 . Replace with appropriate R5 language from VAR-002-3. Similar to R4, the exclusion shouldn’t be based on BES I4. ITC recommends the footnote is reworded to: “For dispersed power producing resources, this requirement applies only to those transformers that have at least one winding at the same or higher voltage as the lowest voltage Point of Interconnection location(s).”
Group
Bonneville Power Administration
Andrea Jessup
Yes
This approach relies on maintenance practices of individual generators and collector systems before reaching the aggregation points as provided by the generator owner. This is in their best interest and in the best interest of the industry.
Yes
This approach relies on maintenance practices of individual generators and collector systems before reaching the aggregation points as provided by the generator owner. This is in their best interest and in the best interest of the industry.
Yes
This approach relies on maintenance practices of individual generators and collector systems before reaching the aggregation points as provided by the generator owner. This is in their best interest and in the best interest of the industry.
Yes

Yes
No
Individual
Joe Tarantino
Sacramento Municipal Utility District
Yes
Please clarify whether Protection System Maintenance only applies to the aggregate transformers, but not the individual wind generators and its respective step-up transformers.
Yes
Yes
Yes
: Please clarify that Protection System Misoperations of the individual wind generators affects only themselves, but will not cause an aggregate effect with other wind turbines. For example, this standard only applies to aggregate substation transformers. There is a concern that still lies on meeting requirements R1 and R2, operating in voltage control mode. Some existing wind generators operate in a power factor control mode, not voltage control mode, and is not capable of operating in either voltage or power factor control mode.
Yes
Comment 1: These revisions are logical and simply needed to clarify applicability. In fact, not approving these revisions may be detrimental to reliability or not useful to the support of the reliable operation of the BES. Moreover, preparing for implementation under the chance the revisions are not approved is diverting time and resources that could otherwise be devoted to efforts that do contribute to the reliable operation of the BES. Comment 2: Please proceed expeditiously with these revisions and convey such urgency to the approving entities. Although the goal of this effort is to ensure these revisions are approved prior to the June 2016 effective date for newly identified elements under the BES definition, affected entities have no alternative but to expend resources and devote time to plan, prepare and begin compliance related activities well before June 2016.

**Additional Comments:**

**AECI**

**Phil Hart**

1. Do you agree with the revisions made in proposed PRC-005-2(X) to clarify applicability of PRC-005-2 to dispersed power producing resources included in the BES through Inclusion I4 of the BES definition? If not, please provide technical rationale for your disagreement along with suggested language changes.

Yes: X

Comments: Suggest removing "for generators" in 4.2.5, as this is redundant. Also suggest removing "the following" in 4.2.5, as the following is not a list of generators, but a list of Protection Systems. Suggested wording changes:

"The following Protection Systems for BES generator Facilities not identified through Inclusion I4 of the BES definition:"

2. Do you agree with the revisions made in proposed PRC-005-3(X) to clarify applicability of PRC-005-3 to dispersed power producing resources included in the BES through Inclusion I4 of the BES definition? If not, please provide technical rationale for your disagreement along with suggested language changes.

Yes: X

Comments: The same comments provided to question 1 also apply to question 2.

3. Do you agree with the revisions made in proposed PRC-005-X(X) to clarify applicability of PRC-005-X (the version of PRC-005 containing revisions to address Sudden Pressure relays, being developed in Project 2007-17.1) to dispersed power-producing resources included in the BES through Inclusion I4 of the BES definition? If not, please provide technical rationale for your disagreement along with suggested language changes.

Yes: X

Comments: The same comments provided to question 1 also apply to question 3.

4. Do you agree with the revisions made in proposed VAR-002-2b(X) to clarify applicability of VAR-002-2b to dispersed power producing resources included in the BES through Inclusion I4 of the BES definition? If not, please provide technical rationale for your disagreement along with suggested language changes.

Yes: X

5. Do you agree with the revisions made in proposed VAR-002-4 to clarify applicability of VAR-002-3 to dispersed power producing resources included in the BES through Inclusion I4 of the BES definition? If not, please provide technical rationale for your disagreement along with suggested language changes.

Yes:

Comments: The bullet describing the DGR exclusion for R4 lacks identification of what "individual" is being excluded, and as written could create confusion. The rationale states the intent is to exclude the individual resources from R4. Suggested revised bullet: "Reporting of reactive capability changes is not applicable to the individual resource for dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System Definition." The bullet used in VAR-002-2b(X) could also be used here, however it lacks specificity.

6. Do you have any additional comments to assist the DGR SDT in further developing its recommendations?

Yes:

No: X