

Consideration of Comments

Project Name: 2014-01 Standards Applicability for Dispersed Generation Resources White Paper

Comment Period Start Date: 6/12/2015

Comment Period End Date: 7/13/2015

There were 21 responses, including comments from approximately 56 different people from approximately 46 different companies representing 7 of the 10 Industry Segments as shown on this report.

The Project 2014-01 (Project) Standards Applicability for Dispersed Generation Resources (DGR) standards drafting team (SDT) thanks all commenters who submitted comments on the DGR draft White Paper (White Paper) proposing revisions to the applicability of NERC Reliability Standards to DGRs White Paper. The White Paper was posted for comment from June 12, 2015 through July 13, 2015. Stakeholders were asked to provide feedback on the White Paper through an electronic comment form. All comments submitted may be reviewed in their original format on the standard's [project page](#). The SDT encourages commenters to review the SDT's responses to ensure all concerns have been addressed. The SDT notes that a majority of commenters agree with the SDT's recommendations as detailed in the White Paper, but that several commenters expressed specific concerns about the content of the White Paper and the Project in general. Some comments supporting the SDT's recommendations are discussed below but in most cases are not specifically addressed in this response. Also, several comments in response to specific questions are duplicated in other questions, and several commenters raise substantively the same concerns as others. Therefore, the SDT's consideration of all comments is addressed in this section in summary form, with duplicate comments treated as a single issue.

1. Summary Consideration

Industry generally agrees with the SDT's recommendations to make applicability changes or provide additional guidance to account for the unique characteristics of DGRs in the NERC standards as explained in the White Paper. However, there are some disagreements among stakeholders and suggestions for language revisions contained in industry comments. The SDT has carefully reviewed and considered each stakeholder comment and has revised or will revise its recommendations where suggested changes are consistent with SDT intent and industry consensus. Moreover, the SDT made or will make several clarifications to its recommendations to more closely align the White Paper with SDT intent and industry consensus. To the extent that there are comments beyond the scope of this SDT, those comments will be communicated to the appropriate entity for consideration. Also, several commenters suggested non-substantive language changes and updates to standard version status. The SDT has carefully considered each such comment and has implemented non-substantive revisions to further clarify the language and update the standard version status where needed. The SDT's consideration of all comments follows.

2. General Comments

More than one commenter stated that the consideration of Reliability Standards Audit Worksheet (RSAW) revisions as method for clarifying the applicability of standards, or for guidance, may not be appropriate in some cases. The commenters stated that RSAW language revisions should not be used to substantially change standards since RSAWs are primarily auditor tools to assess an entity's compliance with standards, and that changes to the scope of an entity's compliance obligation should be enacted through a revision to the standard.

The DGR SDT agrees that any changes to the scope of compliance for dispersed power producing resource owners and operators will be addressed in the standards themselves. The mention of potential use of RSAWs was intended solely as an additional avenue for guidance to reinforce the intent of the standard revisions, and was suggested sparingly in the white paper.

One commenter asserted that each referenced standard must have a version number attached, and that the White Paper should only reference standards that are adopted and which are not proposed for changes since the SDT's future decisions regarding standard modifications will be evaluated by stakeholders at that time they occur, and should not be used as a reference document for standards that will be modified in the future. The commenter indicated as an example of an area that would benefit from further clarification, the applicability of the requirements of MOD-025-2 and FAC-008-3 to BES-excluded collector buses.

The White Paper provides justification of, and proposes revisions to, the applicability of the Reliability Standards and requirements that apply to GOs and/or GOPs, both existing and in development, and should be considered guidance for future standard development efforts. It is the position of the SDT that proactively addressing standards currently in development is worthwhile, advantageous and not deleterious to the scope associated with existing standards. The White Paper is the work direction of the SDT to complete this project, and is not intended to be a Reliability Standard reference document. Specific standards, such as FAC-008, may be addressed utilizing materials that were included in this White Paper, re-crafted as specific Reliability Standard reference documents that would follow the SPM Section 11 requirements.

One commenter noted that there are references to Bulk Power System (BPS), in Section 4.10.4, PRC-004-3, and asserted that since the PRC-004-3 standard being discussed does not use this term, the term “BPS” should be eliminated from this section. Also, a commenter indicated that the term bulk power system is used and not capitalized, and that if the term is intended to be consistent the NERC Glossary term, then Bulk-Power System should be used.

The SDT intended to use the terms bulk power system and BPS because equipment beyond the BES definition was addressed where the reference was used. Where the capitalized term was used, the term is intended to be consistent the NERC Glossary term. Where the lower-case term is used, the term is not intended to be consistent with the NERC Glossary term.

At least one commenter indicated that they do not disagree with the conclusion reached regarding not making changes to FAC-001 Requirement R2 or Requirement R3, however, they recommend removing the first two sentences in the Facility Connection Requirements section, noting that, while it may be uncommon, there is a significant example of a third party dispersed generator GO connecting to an existing GO dispersed generation system at a large wind farm facility in Colorado. The commenter further stated that third party connection may have occurred prior to the adoption of the current Requirement R2 in FAC-001-1, but it is a significant example that could be repeated in the future.

The SDT removed the second sentence from the Facility Connection Requirements section as suggested. Since the sentence as written does not preclude the condition the commenter identified, the SDT does not agree that the first sentence—“ Requirements R2 and R3 of this standard apply to any GO that has an external party applying for interconnection to the GO’s existing Facility in order to connect to the transmission system,” should be removed.

One commenter suggested that the drafting team submit a Standards Authorization Request (SAR) that would use the description of a dispersed power producing resource as a definition to ensure that the proposed definition would properly align with other documentation, such as the Functional Model, Glossary of Terms and Rules of Procedure.

The SDT does not consider an additional definition for dispersed power producing resources necessary for clarification of Inclusion I4 of the BES definition.

At least one commenter suggested that Section 4.10.1 PRC-001-1.1 R2 would benefit from clarifying language similar to that used in Section 4.11.1.3 TOP-001-1a R7, which states reporting on losses of 20 MVA or greater.

The SDT added language to the White Paper section 4.10.1 Requirement R2 that clarifies the intent of limiting reporting of protective relay or equipment failures to the aggregation point of above 75 MVA.

One commenter recommended an aggregate limit of 20 MVA, as suggested for the TOP standards, asserting that it is more reasonable and would maintain consistency throughout the standards, whereas, in Section 4.10.4 PRC-004 and Section 4.10.7 PRC-005-2, the applicability aggregation limit of 75 MVA will result in the exclusion of all feeder breakers.

The use of the aggregation point of 75 MVA aligns with the interpretation of reliability impact associated with dispersed power producing resources as identified in the BES definition and thus is the appropriate delineation for applicability. This limit does not necessarily exclude all feeder breakers, as cases in which the feeder breakers provide a direct transfer trip function to a relay that is located above the 75 MVA aggregation point would bring the feeder breaker into the PRC-004 and PRC-005 applicability.

At least one commenter expressed concern that the language in Section 4.10.12 PRC-024 and 4.10.13 PRC-025 is too prescriptive and limiting, and that the auditors should decide sampling methods.

The SDT values the comment regarding the sampling of relay settings, however, the SDT believes that the current suggestions are reasonable and appropriate, as they are merely recommendations, and as such, are not compliance authority.

At least one commenter stated that, in Section 4.11.5 TOP-006, the suggestion of only requiring the status of the main high side

breaker is counterintuitive to the I2 Inclusion that supports reporting for equipment aggregating greater than 20 MVA, and that it is reasonable to require the status of the aggregate low side feeder breakers.

The SDT believes that communicating the status of the low voltage side feeder breakers provides little operational or reliability benefit, due to the minimal aggregation of power at these locations. Ultimately, the decision whether this level of granularity is material, is independently made by the TOP and/or BA and included as a requirement during the interconnecting negotiation process. The SDT feels that, in light of the minimal reliability benefit of these indications, that NERC should not make communication of the status of the feeder breakers mandatory and should instead leave this to the discretion of the applicable BA's and TOP's. TOP-003-3 is filed and pending regulatory approval, and provides sufficient latitude for BAs and TOPs to acquire the necessary information.

One commenter referred to the SDT's statement that "In cases where a change is recommended to a regional standard, the SDT will notify the affected region," and questioned whether it is appropriate for the SDT to notify regions as such, and if so, inquired as to when the notification will be made.

No recommendations for modifications of the regional standards were proposed.

At least one commenter requested the provision of exceptions for high priority standards, and consideration of exceptions for medium and low priority standards, and also requested clarification of the term "appreciable reliability benefit."

The prioritization methodology was intended to serve strictly as guide for the SDT, to organize the order of review of standards. The timeline associated with required compliance to these standards is based on the effective dates of the standards and is independent of the SDT's prioritization rating. The SDT addressed the high priority standards first in an effort to provide entities with as much lead time as possible to address the modified standards. The phrase "appreciable reliability benefit" as used in the White Paper, is not a defined term, and should be considered in the context of the particular issue under consideration.

One commenter noted that Section 4.7.8, MOD-032, Data for Power System Modeling and Analysis, states that guidance should be provided to show how best model dispersed power producing resources, and inquired as to when the guidance will be provided.

MOD-032 expects the Planning Coordinator (PC) and each of the Transmission Planners to jointly develop modeling data requirements for the PC's area. The DGR SDT recommended in its White Paper that NERC could assist by developing a set of standardized modeling requirements for each type of dispersed power producing resource that all PCs could reference. The SDT will convey its recommendation to the appropriate NERC group for consideration.

3. Suggested Language Revisions

One commenter proposed the revising the following sentence in the fourth paragraph of the Executive Summary: "This necessity [applicability to dispersed power producing resources] is based on how each standard requirement, as written, would apply to dispersed power producing resources and the individual generating units at these facilities, considering the now currently effective BES definition."

The SDT agrees, and has revised the language of the sentence as suggested.

One commenter proposed the revising the sixth bullet under Section 3.3.2 for consistency with the NERC Standard Authorization Request (SAR) Form Template.

The SDT agrees with the comment and has revised the bullet as suggested.

One commenter recommended revising the term "Applicability" in the third bullet prioritizing recommendations reference in Appendix B Section 3.3.3, to lowercase.

The SDT reviewed the referenced language, and has determined the term should remain capitalized since it refers in particular to the Applicability section that is contained in Reliability Standards.

One commenter recommended revising the last sentence in the third paragraph of Section 4.10.1.

The SDT reviewed the sentence, and elects to retain the language as written.

One commenter suggested replacing the term "RRO" in Section 4.10.3 with "Regional Entity."

The SDT agrees that the term would benefit from revision, and has revised the term as suggested.

One commenter suggested removing the first two paragraphs of the Guidelines and Technical Basis section listed under section 4.4.4, FAC-008 — Facility Ratings, stating that they are redundant with other areas of the White Paper. The SDT reviewed the paragraphs the commenter referenced, and elects to retain this language.

4. Status Updates

Several commenters suggested updating the status of the list of approval statuses in areas of the White Paper, including suggestions to update the status of various standards in the Appendices.

The standards that were reviewed and are listed in the White Paper, including the Appendices, reflect the status of the standards as of December 11, 2014. The White Paper was revised to indicate that the SDT's recommended applicability changes to PRC-005-4 were approved by the Board on December 18, 2014 and are pending regulatory approval, and that VAR-002-2 was approved by FERC on May 29, 2015.

5. CIP

At least one commenter requested the DGR SDT recommend to the CIP-003 SDT that applicability to dispersed power producing resources be limited, and provided specific examples and suggested language as follows:

4.1.3 Generator Operator: For dispersed power producing resources identified through Inclusion I4 of the BES definition, the only BES Cyber Systems that meet the low criterion are any shared BES Cyber Systems at a single plant that could, within 15 minutes, shut down the plant from the point where those resources aggregate to greater than 75 MVA to a common point of connection at 100 kV or above.

4.1.4 Generator Owner: (same as above) For dispersed power producing resources identified through Inclusion I4 of the BES definition, the only BES Cyber Systems that meet the low criterion are any shared BES Cyber Systems at a single plant that could, within 15 minutes, shut down the plant from the point where those resources aggregate to greater than 75 MVA to a common point of connection at 100 kV or above.

The DGR SDT worked with the Project 2014-02 CIP Version 5 Revisions SDT to explore potential language to address DGR concerns. The DGR SDT advised the CIP drafting team regarding revisions to clarify the security and compliance considerations during the development of CIP Version 6 standards.

One commenter recommended removal of the CIP V5 standards section from the White Paper, stating that the conclusions do not provide any additional guidance than what is already provided in CIP-002-5 to evaluate generation resources to determine applicability with CIP V5, and that there is not any disparate treatment to generation resources based on the type of generator. The SDT effort would be incomplete without addressing CIP V5 in the White Paper. The White Paper is not a Reliability Standard supporting reference, therefore, no confusion should be introduced by the information contained in the White Paper. One commenter expressed concern that, in Section 4.14.1 CIP V5 Element 1, there is a risk that the proper personnel will not receive and/or understand that the material remains if the tracking is excluded.

Regarding Section 4.14.1 CIP V5 Element 1, this section was proposed, and is the responsibility of the CIP drafting team. The intent of this language is to allow various levels of monitoring security awareness to allow for varying treatment of CIP assets with different impact levels, i.e. to allow minimal requirements for low-impact CIP assets as opposed to requiring the same level of regulation as required for High impact CIP assets.

6. FAC-008

One commenter noted that FAC-008-3 Table A has the following errors: 1) the number of strings in the element descriptions for Sample Units #1 through #5 are overstated by a factor of 3, with corresponding errors in the Unit Rating and Rating; 2) the preceding paragraphs that correctly describe Figure Sample Unit #4 also need to have “six” modules corrected to “eight.”

Thank you for identifying these errors. The number of strings represented in the table reflects a previous draft of the figure and will be corrected to match the final drawing. Correspondingly the number of modules in Sample Unit 4 will also be corrected to match the figure.

A commenter stated that there is no technical basis to extend the applicability of FAC-008 to the individual solar cell and wind turbine, that the application of the proposed approach would create significant work load without providing benefit to the planning or the reliable operation of the BES, and that the proposal is inconsistent with the adopted applicability of other reliability standards

that have already been revised based on the changes in the BES definition. The commenter further stated that only Facility Ratings apply to dispersed power producing resources, and that their only impact on System Operating Limits is their effect on thermal load on Facilities, consequently the only relevant measure is the total power a dispersed power producing resource can inject and that standard sample configurations cannot be used because varying factors will affect the number of turbines on each collector circuit, and that determining the rating for each element between individual generators and a collector bus would require unique calculations for every wind farm collector line.

The existing FAC-008 standard language already includes the individual generators in the applicability (BES Definition includes dispersed power producing resource generators as BES Elements).

The DGR SDT has modified the FAC-008 section of the White Paper to describe the existing options available for the determination of facility ratings and has provided examples for application.

While a standard approach for addressing DGR applicability for standards was striven for, due to the nature of the individual standards, some specific approaches were needed in order to address the issues applicable to each standard. For FAC-008 the intent is for a generating facility to provide an accurate representation of the Facility rating, including identification of limiting equipment. In order to provide an accurate identification of limiting components, and thus an accurate representation of the actual Facility Rating (“amount of power a dispersed power producing resource can deliver to the grid”), a comprehensive analysis of the generation path from, and including, the individual generators to the point of interconnection to the grid is required.

Regarding the replacement of equipment, there will be a need to validate that the replacement equipment does not change the established facility rating. If the replacement equipment is of a different specification than the existing equipment, this will need to be evaluated to determine the change to the Facility Rating.

The scope of the SAR under which this SDT was tasked was to address the applicability of existing standards to dispersed power producing resources. In consideration of FAC-008, there was no technical justification for providing an exception for dispersed power producing resources, as corresponding conventional resources less than 75 MVA, which could be argued to have the same minimal impact on BES Reliability, are also required to comply with this standard.

More than one commenter raised issues regarding the term “Facilities.”

One commenter indicated that a NERC defined term should not be interpreted in some other way than the Glossary definition, and that if the term “Facility” should include more than BES elements then the definition should change.

Similarly, another commenter stated that the SDT has correctly identified an issue arising from the application of the revised BES definition to Requirement R1, explaining that the use of the term “Facilities” could potentially be interpreted to refer only to BES Facilities because the Glossary definition of “Facility” includes the term “Bulk Electric System Element,” and that, for dispersed power producing facilities, portions of the facility may be excluded, such as the collection system.

Another commenter recommended adopting the rationale provided for TOP-006, applying the requirement at the aggregate Facility level, and recommended revisions to FAC-008-3 Requirement R1.

Another commenter requested clarification of the following sentence in Section 4.4.4, FAC-008 Facility Ratings, Guidelines and Technical Basis: “. . . when the point of interconnection is before the GSU . . .,” and stated that the SDT should avoid terms like “before” in reference to an element because terms such as “before” or “after” depend on whether the subject element is viewed from the generator or the transmission system. The commenter suggested using terms such as: “low-voltage side” and “high voltage side.”

The sentence that includes “. . . when the point of interconnection is before the GSU . . .” is referring to the situation in which the point of interconnection is on the low-voltage side of the GSU.

Another commenter recommended removing Item 2 from the White Paper, asserting that the BES Definition excludes the collection system of a dispersed generation resource, and that if there is error in the BES Definition, that issue should be addressed through the standards development process.

The SDT adopted the existing scope of FAC-008 requirements, for dispersed power producing resources, as the required rating information is an integral part of establishing accurate modeling and facilitating planning operations. Facility ratings are required for all elements/components that serve to generate and/or deliver generated electricity to the grid and may include non-BES electrical

elements. This is necessary to provide an accurate representation of the facility capabilities which are used in modeling and planning activities.

At least one commenter expressed concern that the White Paper may be used as a measure of compliance due to the use of the term "should" throughout the document. The commenter also suggested the following revision: "GO or GOP should **have** ratings . . .," asserting there is no benefit in "providing" these ratings to a Transmission Planner. The commenter further stated that the inverters need to be the limit of granularity at PV plants.

The SDT replaced "provide" with "have" in the FAC-008 section as suggested. The SDT agrees that for the majority of standards the inverters will be the limit of granularity at PV plants; however, for FAC-008, further granularity is necessary to accurately identify limiting components and establish Facility Ratings.

One commenter questioned the inclusion of PTs in Section 4.4.4, FAC-008, Facility Ratings, stating that PTs have been excluded from consideration by CAN-0018.

CAN-0018 has been retired by NERC.

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Director of Standards, [Howard Gugel](#) (via email) or at (404) 446-9693.

The Industry Segments are:

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

1. Do you agree with the accuracy of the technical content of the posted version of the White Paper? If not, please explain and offer alternative language.

John Fontenot - Bryan Texas Utilities - 1 -

Selected Answer: Yes

Heather Morgan - EDP Renewables North America LLC - 5 -

Selected Answer: No

Answer Comment:

There is no technical basis for the SDT proposal to extend the applicability of FAC-008 to the individual solar cell and wind turbine. The application of the

proposed approach would create significant work load without providing benefit to the planning or the reliable operation of the BES. More importantly - this proposal is inconsistent with the adopted applicability of other reliability standards that have already been revised based on the changes in the BES definition and define their applicability to equipment where the aggregated generation capability is equal (?) or above 75MVA .

The current application of FAC-008 should be retained.

FAC-008 is intended to ensure the availability of Facility Ratings essential for the determination of System Operating Limits based on technically sound principles. For this purpose, the only relevant datum is the amount of power a dispersed power producing resource can deliver to its POI.

System Operating Limits (SOLs) are based on the following operating criteria:

- - Facility Ratings
 - Transient Stability Ratings
 - Voltage Stability Ratings
 - System Voltage Limits
- Only Facility Ratings apply to dispersed power producing resources. Their only impact on SOLs is their effect on thermal load on Facilities. Consequently the only relevant measure is the total power a dispersed power producing resource can inject.

The proposal is difficult to apply and will produce inconsistent results over time. However, the differences have no meaningful impact on the BES.

- Standard sample configurations cannot be used. The number of WTGs and the distances between them differ for each collector circuit, depending on numerous variables: terrain, wind patterns, soil conditions all affecting WTG locations. The same factors will affect the number of turbines on each collector circuit. Therefore, determining the rating for each element between individual generators and a collector bus would require unique calculations for every wind farm collector line.

- Replacing equipment also needs to be considered when calculating ratings under this proposal. Examples include replacing an entire WTG, or a WTG's Generator Step-up Transformer, or a new length of cable. All of these would need to be considered when making the proposed rating calculation, even though the impact on the BES is negligible.

The approach proposed for FAC-008 is inconsistent with the reasoning applied to the applicability of other standards. The technical basis for limiting PRC-005 applicability to facilities where generation aggregates to at least 75 MVA is that the impact of a fault at a WTG would not be discernible on interconnected transmission systems. Likewise, the Facility Rating for dispersed power producing resources should consider only facilities where generation aggregates to at least 75 MVA (nameplate).

Response:

Emily Rousseau - MRO - 1,2,3,4,5,6 - MRO

Group Name:

MRO-NERC Standards Review Forum (NSRF)

Group Member Name	Entity	Region	Segments
Joe Depoorter	Madison Gas & Electric	MRO	3,4,5,6
Amy Casucelli	Xcel Energy	MRO	1,3,5,6
Chuck Lawrence	American Transmission Company	MRO	1
Chuck Wicklund	Otter Tail Power Company	MRO	1,3,5
Theresa Allard	Minnkota Power Cooperative, Inc	MRO	1,3,5,6
Dave Rudolph	Basin Electric Power Cooperative	MRO	1,3,5,6
Kayleigh Wilkerson	Lincoln Electric System	MRO	1,3,5,6
Jodi Jenson	Western Area Power Administration	MRO	1,6
Larry Heckert	Alliant Energy	MRO	4
Mahmood Safi	Omaha Public Utility District	MRO	1,3,5,6
Marie Knox	Midwest ISO Inc.	MRO	2
Mike Brytowski	Great River Energy	MRO	1,3,5,6
Randi Nyholm	Minnesota Power	MRO	1,5
Scott Nickels	Rochester Public Utilities	MRO	4
Terry Harbour	MidAmerican Energy Company	MRO	1,3,5,6
Tom Breene	Wisconsin Public Service Corporation	MRO	3,4,5,6
Tony Eddleman	Nebraska Public Power District	MRO	1,3,5

Selected Answer:

No

Answer Comment:

The NSRF has a number of comments which we will address under the headings of Errors, Cautions, CIP, and FAC-008-3 Issues & Recommendation.

Errors

FAC-008-3 Table A has a number of errors. The number of strings in the element descriptions for Sample Units #1 through #5 are overstated by a factor of 3, with corresponding errors in the Unit Rating and Rating. The preceding paragraphs correctly describe Figure A. Sample Unit #4 also needs to have “six” modules corrected to “eight.”

Cautions:

The consideration of RSAW revisions as an additional or appropriate method for clarifying the applicability of standards, as cited in the Executive Summary and Purpose, may not be appropriate in some cases. RSAW language revisions should not be used to substantially change a standard. RSAWs are primarily auditor tools to assess an entity’s compliance with standards. Entities must comply with standards, not RSAWs. Any change to the scope of an entity’s compliance obligation should be enacted through a revision to the standard.

CIP:

We request the SDT recommend to the CIP-003 SDT that applicability to dispersed power producing resources be limited as follows:

4.1.3 Generator Operator: For dispersed power producing resources identified through Inclusion I4 of the BES definition, the only BES Cyber Systems that meet the low criterion are any shared BES Cyber Systems at a single plant that could, within 15 minutes, shut down the plant from the point where those resources aggregate to greater than 75 MVA to a common point of connection at 100 kV or above.

4.1.4 Generator Owner: (same as above) For dispersed power producing resources identified through Inclusion I4 of the BES definition, the only BES Cyber Systems that meet the low criterion are any shared BES Cyber Systems at a single plant that could, within 15 minutes, shut down the plant from the point where those resources aggregate to greater than 75 MVA to a common point of connection at 100 kV or above.

FAC-008-3 Issues & Recommendation

The SDT has correctly identified an issue arising from the application of the revised BES definition to Requirement R1: “2. The use of the term “Facilities” in the phrase “...determining the Facility Ratings of its solely and jointly owned generator Facility(ies) up to the low side terminals of the main step up transformer...” could potentially be interpreted to refer only to BES Facilities because the Glossary definition of “Facility” includes the term “Bulk Electric System Element.” For dispersed power producing facilities, that could leave out portions of the facility, specifically the collection system.”

The SDT errs in its use of the terms “could potentially be interpreted to refer” and “could leave out.” These phrases should be replaced by “refers” and “leaves out”, respectively. This is not a matter subject to interpretation; the SDT has identified the impact of the BES definition change on the requirement.

This is an issue that needs to be addressed. It does create omissions

inconsistent with the determination of Facility Ratings. However, technical guidance contradicting NERC Glossary definitions and their clear application is not the appropriate method—the standard applicability or requirement wording should be revised.

We recommend the SDT adopt the recommendation and rationale provided for TOP-006, that the requirement be applied at the aggregate Facility level, by similar reasoning. The SDT cites Inclusion I2 of the BES definition, reasoning that if loss of less than 20 MVA would burden the BPS, the definition would have been less than 20 MVA. By the same argument, citing Inclusion I4, if dispersed power producing resources do not impact the BES until they aggregate to greater than 75 MVA, they will not impact the BES at less than 75 MVA.

This can be demonstrated by example. Consider a wind Facility with 26 MVA collector buses. It does not become a BES Facility until three such buses come on-line. If one, or both, are lost before the third comes on-line and makes it a BES Facility, it shouldn't impact the BES. If there is no impact to the BES from the loss of individual collector buses before it becomes a Facility, there shouldn't be any impact due to the same loss after designation as a Facility, so the Facility Ratings prior to the point of aggregation have no significant effect on reliability.

We recommend FAC-008-3 R1 be revised as follows:

Each Generator Owner shall have documentation for determining the Facility Ratings of its

solely and jointly owned generator Facility(ies):

- for generating resource(s) under Inclusion I2, from the generating

resource(s) up to the low side terminals of the main step up transformer if the Generator Owner does not own the main step up transformer and the high side terminals of the main step up transformer if the Generator Owner owns the main step up;

- for dispersed power producing resources under Inclusion I4, from the point where those resources aggregate to greater than 75 MVA to a common point of connection at a voltage of 100 kV or above.

Response:

Likes: 1 Berkshire Hathaway - PacifiCorp, 6, Ryan Brad

Dislikes: 0

John Seelke - PSEG - 1,3,5,6 - NPCC,RFC

Group Name: PSEG

Group Member Name	Entity	Region	Segments
Joseph Smith	Public Service Electric and Gas	RFC	1
Jeffrey Mueller	Public Service Electric and Gas Co.	RFC	3
Tim Kucey	PSEG Fossil LLC	RFC	5
Stephen York	PSEG Energy Resources & Trade LLC	RFC	6

Selected Answer:

No

Answer Comment:

First, each referenced standard MUST have a version number attached. Second, it should only reference standards that are adopted and which are NOT PROPOSED for changes. What the team may decide to do in the future regarding standard modifications will be evaluated by stakeholders at that time; the SDT's present opining on those modifications should not be granted status as a "reference document" for standards that will be modified in the future. I have raised my concerns regarding the white paper's reference document status with the Standards Committee chair and with the SDT chair and NERC developer on the SDT. The attachment has additional information.

An example of the document's lack of clarity in the white paper is how it intends to address BES-excluded collector busses in standards such as MOD-025-2 and FAC-008-3. While I am interested in this issue, I will await the SDT's proposed modifications to debate it.

Response:**Barbara Kedrowski - We Energies - Wisconsin Electric Power Co. - 3,4,5 - RFC****Selected Answer:**

No

Answer Comment:

1. Section 4.4.4 FAC-008 Facility Ratings, Guidelines and Technical Basis:

- 3rd paragraph: Please clarify the sentence that includes “...when the point of interconnection is before the GSU...”. The SDT should avoid terms like “before” in reference to an element. Terms such as “before” or “after” depend on whether the subject element is viewed from the generator or the transmission system. Clarity is improved by using terms such as the low-voltage side of the GSU, the high voltage side of the GSU, etc.
 - Item 2 should be removed from the paper. Since the BES Definition specifically excludes the collection system of a dispersed generation resource, this document should not try to get around it by putting it back in. The proper way to address this issue is to correct the error in the BES Definition by the appropriate standards process. The attempt to correct a NERC standards document by the language in this section violates the established NERC standards process. Since the additional discussion of sample units for solar and wind facilities is based on the attempt to include equipment that has been excluded from the BES by the new BES Definition as well, the usefulness of this entire section is questionable.
2. A NERC defined term should not be interpreted in some other way than the glossary definition. If NERC wants the term “Facility” to include more than BES elements then the definition should change.
 3. Section 4.10.4 PRC-004-3, 1st paragraph: There are several references to Bulk Power System, or BPS, in this section. Since the PRC-004-3 standard being discussed does not use this term, the term “BPS” should be eliminated from this section.
 4. The Whitepaper references RSAWs are being used to give guidance. RSAWs are not a guidance document and the team should not move away from the

specific verbiage of the standard.

Response:

Molly Devine - IDACORP - Idaho Power Company - 1 -

Selected Answer: Yes

Brian Van Gheem - ACES Power Marketing - 6 - NA - Not Applicable

Group Name: ACES Standards Collaborators

Group Member Name	Entity	Region	Segments
Bob Solomon	Hoosier Energy Rural Electric Cooperative, Inc.	RFC	1
Ginger Mercier	Prairie Power, Inc.	SERC	1,3
Shari Heino	Brazos Electric Power Cooperative, Inc.	TRE	1,5
Bill Hutchison	Southern Illinois Power Cooperative	SERC	1
Michael Brytowski	Great River Energy	MRO	1,3,5,6
Tara Lightner	Sunflower Electric Power Corporation	SPP	1

Selected Answer:

Yes

Answer Comment:

- 1) We appreciate the SDT's efforts on maintaining this White Paper and providing background and technical rationale for proposed and actual revisions to the applicability of appropriate Reliability Standards. We support the technical contents of the White Paper, as written.
- 2) However, we do have some general comments regarding the White Paper that we feel should be incorporated into this revision. Within the fourth paragraph of the Executive Summary, we feel the sentence "This necessity [applicability to dispersed power producing resources] is based on how each standard requirement, as written, would apply to dispersed power producing resources and the individual generating units at these facilities, considering the now currently effective BES definition" is cumbersome to read. We suggest rewording the sentence to read "This necessity is based on how each standard requirement, as written, would apply to dispersed power producing resources and the individual generating units at these facilities, considering the current BES definition."
- 3) The list of approval statuses listed under Section 3.3.1, Scope of Standards Reviewed, incorrectly references the status "Filed and Pending Regulatory Approval." When comparing the contents of Appendix A provided by the SDT, the status should be updated to "Pending Regulatory Approval."
- 4) The sixth bullet under Section 3.3.2 is taken directly from the NERC Standard Authorization Request (SAR) Form Template. We recommend keeping the language as it is listed on the template, which states, "Personnel responsible for planning and operating interconnected Bulk-Power Systems

shall be trained, qualified, and have the responsibility and authority to implement actions.”

5) Under Section 3.3.3, the third bullet referenced for prioritizing recommendations in Appendix B should not capitalize “Applicability.” For clarity, we also suggest rewording to read “Recommendation to changing applicability of Reliability Standards and specific requirements.”

6) We believe the Guidelines and Technical Basis addition listed under section 4.4.4 is appropriate for this document. However, the first two paragraphs are redundant with the white paper. We suggest removing the first two paragraphs and start the Guidelines and Technical Basis addition with the phrase “The use of the term...”

7) We feel the last sentence in the third paragraph of Section 4.10.1 could be worded better. Consider this alternative language instead, “...Relay protection functions, such as underfrequency, overfrequency, undervoltage, and overvoltage, are independent of the interconnected utility’s protective relay settings, and are defined in PRC-024.”

8) Replace the “RRO” reference within Section 4.10.3 with “Regional Entity.”

9) We have concerns with the inclusion of the CIP V5 standards in this White Paper. The conclusions do not provide any additional guidance than what is already provided in CIP-002-5 to evaluate generation resources to determine applicability with CIP V5. There is not any disparate treatment to generation resources based on the type of generator. We recommend the removal of this section, as it only adds confusion to the implementation of CIP V5 standards.

Response:

Randi Heise - Dominion - Dominion Resources, Inc. - 5 -

Group Name: Dominion - RCS

Group Member Name	Entity	Region	Segments
Larry Nash	Dominion Virginia Power	SERC	1
Louis Slade	Dominion Resources, Inc.	SERC	6
Connie Lowe	Dominion Resources, Inc.	RFC	3
Randi Heise	Dominion Resources, Inc,	NPCC	5

Selected Answer: No

Answer Comment:

Comments: Dominion has the following comments based upon the posted redline version:

- Page 27 of 40 – PRC-005-4 was approved by the Board on 11/13/2014 and filed on 12/18/2014 according to the [NERC website](#).
- Pages 36/37 of 40 – While it is true that VAR-002-4 was approved by the Board on 11/13/2014 it might be more relevant to note that it has been approved by regulatory agencies and has an enforcement date of May 29, 2015.

Response:

Randi Heise - Dominion - Dominion Resources, Inc. - 5 -

Group Name: Dominion - RCS

Group Member Name	Entity	Region	Segments
Larry Nash	Dominion Virginia Power	SERC	1
Louis Slade	Dominion Resources, Inc.	SERC	6
Connie Lowe	Dominion Resources, Inc.	RFC	3
Randi Heise	Dominion Resources, Inc,	NPCC	5

Selected Answer: No

Answer Comment:

- Comments: Dominion has the following comments based upon the posted redline version:
- Page 27 of 40 – PRC-005-4 was approved by the Board on 11/13/2014 and filed on 12/18/2014 according to the [NERC website](#).
- Pages 36/37 of 40 – While it is true that VAR-002-4 was approved by the Board on 11/13/2014 it might be more relevant to note that it has been

approved by regulatory agencies and has an enforcement date of May 29, 2015.

Response:

Randi Heise - Dominion - Dominion Resources, Inc. - 5 -

Group Name: Dominion - RCS

Group Member Name	Entity	Region	Segments
Larry Nash	Dominion Virginia Power	SERC	1
Louis Slade	Dominion Resources, Inc.	SERC	6
Connie Lowe	Dominion Resources, Inc.	RFC	3
Randi Heise	Dominion Resources, Inc,	NPCC	5

Selected Answer: No

Answer Comment:

Dominion has the following comments based upon the posted redline version:

1. Page 27 of 40 – PRC-005-4 was approved by the Board on 11/13/2014 and filed on 12/18/2014 according to the [NERC website](#).
2. Pages 36/37 of 40 – While it is true that VAR-002-4 was approved by the

Board on 11/13/2014 it might be more relevant to note that it has been approved by regulatory agencies and has an enforcement date of May 29, 2015.

Response:

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

Group Name: Southern Company

Group Member Name	Entity	Region	Segments
Robert A. Schaffeld	Southern Company Services, Inc.	SERC	1
R. Scott Moore	Alabama Power Company	SERC	3
William D. Shultz	Southern Company Generation	SERC	5
John J. Ciza	Southern Company Generation and Energy Marketing	SERC	6

Selected Answer: No

Answer Comment:

We are concerned that the white paper might be used as a measure of compliance due to the extensive use of "should" throughout the document. For example, the FAC-008 guidance provided for PV facilities is nice to have, but involves a very granular evaluation of the DC side of the inverters. It states:

"GO or GOP should provide ratings for array or panel, DC Cables (Positive and Negative), combiner boxes, inverters, as well as associated breakers, instrument transformers (CVTs, PTs), disconnect switches, and relays, etc. This is shown in Figure A."

Note the word "should" in the statement above is the term used in the guideline. NERC should not treat this as a "requirement" and entities should not be audited against it. With this wording, the guideline language may ultimately morph into a requirement of FAC-008. This is problematic and is overreaching from a BES reliability perspective.

We believe that a change in the above FAC-008 wording to "GO or GOP should **have** ratings...." We do not see any practical benefit in "providing" these ratings to a Transmission Planner. If the guidance to document and communicate the capability of individual PV panels, for example, becomes a standard, it could turn into burdensome bookkeeping task that has very little impact to BES reliability. It is believed that the inverters need to be the limit of granularity at PV plants.

Response:

Thomas Foltz - AEP - 5 -

Selected Answer:

No

Answer Comment:**Section 4.1.1 FAC-001 – Facility Connection Requirements**

While AEP doesn't disagree with the conclusion reached regarding not making changes to FAC-001 R2 or R3, we don't agree with the first two sentences in this section. While it might be uncommon, a significant example of a third party dispersed generator GO connecting to an existing GO dispersed generation system exists at a large wind farm facility in Colorado. The third party connection may have occurred prior to the adoption of the current Requirement R2 in FAC-001-1, but it is a significant example that could be repeated in the future. As a result, we recommend that the first two sentences be removed from the white paper.

Response:**Kathleen Black - DTE Energy - 3,4,5 - RFC****Selected Answer:**

No

Answer Comment:

Section 4.4.4, FAC-008, Facility Ratings, page 13, lists PTs as equipment needing ratings, however, PTs have been excluded from consideration per CAN-0018. Section 4.7.8, MOD-032, Data for Power System Modeling and

Analysis, states that guidance should be provided to show how ot best model dispersed power producing resources. When will this guidance be provided?

Response:

Kathleen Black - Kathleen Black - -

Selected Answer: No

Answer Comment:

Section 4.4.4, FAC-008, Facility Ratings, page 13, lists PTs as equipment needing ratings, however, PTs have been excluded from consideration per CAN-0018. Section 4.7.8, MOD-032, Data for Power System Modeling and Analysis, states that guidance should be provided to show how to best model dispersed power producing resources. When will this guidance be provided?

Response:

Kathleen Black - Kathleen Black - -

Selected Answer: No

Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - SPP**Group Name:** SPP Standards Review Group

Group Member Name	Entity	Region	Segments
Shannon Mickens	Southwest Power Pool Inc.	SPP	2
Karl Diekevers	Nebraska Public Power District	MRO	1,3,5
Jason Smith	Southwest Power Pool Inc	SPP	2
Stephanie Johnson	Westar Enger, Inc	SPP	1,3,5,6
Wes Mizell	Westar Enger, Inc	SPP	1,3,5,6
Bo Jones	Westar Enger, Inc	SPP	1,3,5,6
Tiffany Lake	Westar Enger, Inc	SPP	1,3,5,6

Selected Answer: Yes**Answer Comment:**

We feel that the drafting team did a great job putting this technical documentation together. In our opinion, the information provided is well thought out and paints a vivid picture of the goals that the drafting team are trying to accomplish. However, we would suggest to the drafting team to submit a SAR that would use the description of a dispersed power producing resources(page 6) as a definition and this would be included into relevant documentation such as: the Functional Model, Glossary of Terms and

Rules of Procedure (RoP). Additionally, the details in the SAR would help ensure that the proposed definition would properly align with other documentation.

Response:

Rachel Coyne - Texas Reliability Entity, Inc. - 10 -

Selected Answer:

Yes

Answer Comment:

Regarding Section 4.10.1 PRC-001-1.1 R2, clarifying language similar to that used in Section 4.11.1.3 TOP-001-1a R7, which states reporting on losses of 20 MVA or greater would be useful.

In Section 4.10.4 PRC-004 and Section 4.10.7 PRC-005-2, the applicability aggregation limit of 75 MVA will result in the exclusion of all feeder breakers. Texas RE recommends an aggregate limit of 20 MVA, as suggested for the TOP standards, as it is more reasonable and would maintain consistency throughout the standards.

Texas RE is concerned the language in Section 4.10.12 PRC-024 and 4.10.13 PRC-025 is too prescriptive and limiting. The auditors should decide sampling methods.

In Section 4.11.5 TOP-006, the suggestion of only requiring the status of the

main high side breaker is counterintuitive to the I2 Inclusion that supports reporting for equipment aggregating greater than 20 MVA. It is reasonable to require the status of the aggregate low side feeder breakers.

In Section 4.14.1 CIP V5 Element 1, Texas RE is concerned the risk that the proper personnel does not receive and/or understand the material remains if the tracking is excluded.

Response:

Rachel Coyne - Texas Reliability Entity, Inc. - 10 -

Selected Answer: Yes

Answer Comment:

Regarding Section 4.10.1 PRC-001-1.1 R2, clarifying language similar to that used in Section 4.11.1.3 TOP-001-1a R7, which states reporting on losses of 20 MVA or greater would be useful.

In Section 4.10.4 PRC-004 and Section 4.10.7 PRC-005-2, the applicability aggregation limit of 75 MVA will result in the exclusion of all feeder breakers. Texas RE recommends an aggregate limit of 20 MVA, as suggested for the TOP standards, as it is more reasonable and would maintain consistency throughout the standards.

Texas RE is concerned the language in Section 4.10.12 PRC-024 and 4.10.13

PRC-025 is too prescriptive and limiting. The auditors should decide sampling methods.

In Section 4.11.5 TOP-006, the suggestion of only requiring the status of the main high side breaker is counterintuitive to the I2 Inclusion that supports reporting for equipment aggregating greater than 20 MVA. It is reasonable to require the status of the aggregate low side feeder breakers.

In Section 4.14.1 CIP V5 Element 1, Texas RE is concerned the risk that the proper personnel does not receive and/or understand the material remains if the tracking is excluded.

Response:

Brad Ryan - Berkshire Hathaway - PacifiCorp - 6 - WECC

Selected Answer:

No

Answer Comment:

Please see MRO-NSRF Comments which have been submitted.

Response:

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

Selected Answer: Yes

Answer Comment: N/A

Response:

Lee Pedowicz - Northeast Power Coordinating Council - 10 - NPCC

Group Name: NPCC--Project 2014-01

Group Member Name	Entity	Region	Segments
Alan Adamson	New York State Reliability Council, LLC	NPCC	10
Edward Bedder	Orange and Rockland Utilities Inc.	NPCC	1
David Burke	Orange and Rockland Utilities Inc.	NPCC	3
Greg Campoli	New York Independent System Operator	NPCC	2
Sylvain Clermont	Hydro-Quebec TransEnergie	NPCC	1

Kelly Dash	Consolidated Edison Co. of New York, Inc.	NPCC	1
Gerry Dunbar	Northeast Power Coordinating Council	NPCC	10
Michael Forte	Consolidated Edison Co. of New York, Inc.	NPCC	1
Kathleen Goodman	ISO – New England	NPCC	2
Michael Jones	National Grid	NPCC	1
Mark Kenny	Northeast Utilities	NPCC	1
Helen Lainis	Independent Electricity System Operator	NPCC	2
Connie Lowe	Dominion Resources Services, Inc.	NPCC	5
Alan MacNaughton	New Brunswick Power Corporation	NPCC	9
Paul Malozewski	Hydro One Networks Inc.	NPCC	1
Bruce Metruck	New York Power Authority	NPCC	6
Brian O'Boyle	Consolidated Edison Co. of New York, Inc.	NPCC	8
Silvia Parada Mitchell	NextEra Energy, LLC	NPCC	5
Lee Pedowicz	Northeast Power Coordinating Council	NPCC	10
Robert Pellegrini	The United Illuminating Company	NPCC	1
Si Truc Phan	Hydro-Quebec TransEnergie	NPCC	1
David Ramkalawan	Ontario Power Generation, Inc.	NPCC	5
Brian Robinson	Utility Services	NPCC	8

Brian Shanahan	National Grid	NPCC	1
RuiDa Shu	Northeast Power Coordinating Council	NPCC	10
Wayne Sipperly	New York Power Authority	NPCC	5
Peter Yost	Consolidated Edison Co. of New York, Inc.	NPCC	3
Glen Smith	Entergy Services, Inc.	NPCC	5
Peter Yost	Consolidated Edison Co. of New York, Inc.	NPCC	3
Guy Zito	Northeast Power Coordinating Council	NPCC	10

Selected Answer:

No

Answer Comment:

On page 9 above the table it is mentioned that “...In cases where a change is recommended to a regional standard, the SDT will notify the affected region.” Is it appropriate for the SDT to make this notification, and when will the notification be made?

Bulk Power System is used extensively on page 10, and not capitalized. If it is intended for its definition to be consistent with that listed in the NERC Glossary, it should be capitalized. Also, from the NERC Glossary, it should be Bulk-Power System.

In Section 3.3.3 Prioritization Methodology, for high priority could exceptions be issued for entities to avoid the pitfalls of rushing changes to standards? Exceptions should be considered for medium and low priorities as well. In the medium priority bullet “appreciable reliability

benefit” is used. What is considered an “appreciable reliability benefit”? There are operating conditions where the loss of 5MW can put the Bulk-Power System in an Emergency condition.

The Appendix A Source incorrectly lists PRC-002-1 as Pending Regulatory Approval. PRC-002-1 was remanded by FERC, and PRC-002-2 has been submitted to FERC and is Pending Regulatory Approval. This might appear elsewhere in the Appendices, and needs to be reviewed. PRC-002-1 dealt with installation requirements; PRC-002-2 deals with the capturing of data.

Response:

End of Report