

Consideration of Comments

Project 2014-01 Standards Applicability for Dispersed Generation Resources

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 proposing revisions to the applicability of NERC Reliability Standards to DGRs (White Paper). The White Paper was posted for an informal comment period from April 17, 2014 through May 5, 2014. Stakeholders were asked to provide feedback on the White Paper through a special electronic comment form. There were 24 sets of comments, including comments from approximately 82 different commenters from approximately 54 companies representing 9 of the 10 Industry Segments as shown in the table on the following pages.

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.

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 significant disagreements and apparent confusion expressed by commenters on the DGR Standards Authorization Request (SAR) and some of the recommendations contained in the White Paper. 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. The SDT's consideration of all comments follows.

1. General Scope and Objective of the SAR and the DGR Project

A. Scope

Some commenters are concerned that the White Paper goes much further than the scope of the SAR and recommends that the SDT focus its efforts solely on three identified high-priority standards. Those commenters do not support the SDT moving forward on work of any other standard because, according to commenters, there is not a clear and justified technical reason at this time to require revisions to any more standards. Specifically, some commenters recommend that the SDT hand off all other observations in the White Paper to NERC staff to work with the appropriate NERC technical committees to develop and publish any guidance needed for those Standards. The SDT disagrees that the SAR limits scope to only the three identified high-priority standards, and industry consensus clearly supports that position. For these reasons, the SDT conducted a review of all standards. The SDT intends to coordinate as much as possible with other SDTs on those applicable standards for which current SDT work is underway. The SDT also notes that a parallel but separate effort to develop industry guidance on DGR applicability is underway that includes members of the SDT, NERC staff, and independent industry experts.

At least one commenter believes that the White Paper needs to consider many system configurations, reasoning that not all configurations are the same. The SDT understands that a GOP's voltage controlling equipment and Elements differ based on the type of generation facility, and that indeed system configurations vary. However, a "one size fits all" approach would not be appropriate due to the unique characteristics of dispersed generation. Each generation facility may have a different methodology to ensure the facility has an automatic and dynamic response to changes in voltage to ensure the voltage schedule is maintained. It is implied, for example, in NERC VAR-001-3 that each GOP and TOP should understand capabilities of the generation facility and the requirements of the transmission system to ensure a mutually agreeable solution and schedule is used.

Some commenters commented or made suggestions on the SDT's consideration and treatment of Regional standards. With regard to the Regional standards, the SDT may make recommendations to the Regions; however, revisions to the existing Regional standards will be undertaken by the Regions.

B. Timing

Several commenters encourage the SDT to proceed expeditiously on this Project, particularly on developing revisions to the identified high-priority standards, i.e., PRC-004-2.1a, PRC-005, and VAR-002, so that owners can proceed with implementation of the BES definition and these

standards without unnecessary interim work. The SDT agrees and is therefore proceeding as expeditiously as possible with work on the high-priority standards. The SDT remains on schedule to complete its recommendations on the high-priority standards by the November 2014 NERC Board of Trustees (Board) meeting, with recommendations on the medium- and low-priority standards by the February 2015 Board meeting.

C. Status Quo

At least one commenter disagrees with the White Paper language that states that the intent of the Project is to “maintain the status quo for applicability of the standards as they have been applied over time with respect to dispersed generation resources, where the status quo does not create a reliability gap” because each Regional Entity could have been applying it differently. The SDT will consider this observation in review and revision of the White Paper and make revisions if changes are necessary to more closely align the White Paper with SDT intent and industry consensus.

D. Target Applicability

Several commenters express concern and confusion on the term “Target Applicability” and the individual versus aggregate approach. For example, at least one commenter recommends that the SDT define the terms used to specify “Target Applicability” of the standard revisions. According to that commenter, if the terms “Point of common control,” “point where aggregated to greater than 75 MVA,” and “Aggregate Facility Level” are intended to have different meanings, these should be specified. At least one commenter suggests adding definitions to the NERC Glossary of Terms. Another commenter believes that a better approach would be to use the Point of Interconnect as the Target Applicability, as it is a well-defined industry term, noting that using the other terms could lead to misunderstanding or result in inconsistency due to individual interpretations. Another commenter questions whether “aggregated facilities” in Appendix B refer to greater than 75 MVA aggregation points.

Another commenter recommends that the SDT specify how common components should be aggregated into “Elements” to prevent confusion and inconsistency across standards and regions. The commenter believes that given the variety of technologies lumped under the dispersed generation rubric, a technically justified, technology-neutral approach for the aggregation methodology is needed, and the critical mass components must attain to be treated as Elements must be clearly established. The commenter requests confirmation that the statement “loss of significant number of units” in section 4.2.3. means “more than 75 MVA of aggregated capacity.”

First, the SDT developed the “Target Applicability” categories to provide additional clarity on how the SDT believes the various standards listed in the White Paper Appendix B should be applied to DGR facilities based on the technical analyses performed by the SDT. The SDT recognizes the value of clear definitions of these four application types. However, the SDT does not intend to use specific terminology for these applications in the standard language modifications the SDT may develop and propose for these applications used in Appendix B, i.e., the point where aggregates to greater than 75 MVA, Point of Common Control, etc., and as such will not be proposing to add any of these definitions to the NERC Glossary. The SDT recognizes that any proposed standard language changes must provide clear guidance on applicability superior to the terminology used in Appendix B’s “Target Applicability,” so the SDT is therefore reviewing the White Paper and appendices to clarify the terms in question. The SDT will consider use of the term “Point of Interconnection” as applicable, at least to the extent it is consistent with SDT intent and industry consensus.

Second, the SDT confirms that the aggregated facilities refer to aggregate nameplate capability greater than 75 MVA and will clarify the White Paper to enhance the current explanation.

Finally, The SDT will review the White Paper and appendices to provide expanded explanation of the terms used. In section 4.2.3 of the White Paper the SDT intends to include individual generating units and the associated aggregating equipment in the applicability of certain requirements in order to account for cases in which common mode issues could impact reliability. In these cases, consideration of individual generating units and the associated aggregation equipment may be required at locations below the 75 MVA threshold, when common mode issues could affect greater than 75 MVA.

E. SDT Coordination

Some commenters note that active SDTs that are developing standards that require applicability changes should make those changes. Other commenters believe other SDTs may appropriately make applicability changes but question how gaps can be addressed as various standards versions are approved. For example, one commenter questions whether the SDTs for Projects 2007-06 and 2014-03 will finish in time so that entities’ compliance is not affected.

The DGR SDT cannot answer or make predictions on the completion, passage, and approval of standards. However, the SDT is working as quickly as possible to address the identified standard modifications and is working with NERC to develop guidance to the Regions to account for any regulatory gaps in approving applicability changes to the standards. Moreover, the SDT is actively coordinating with other SDTs on those applicable standards for which current SDT work is underway and has posted a coordination document on the project web page to fully explain that coordination. Scope changes will be addressed with the SC as needed.

2. Identification of Standards Requiring Applicability Changes or Additional Guidance

The White Paper identifies 24 standards that may require modifications or guidance to account for the unique characteristics of dispersed power producing resources, including three high-priority standards. Industry was asked whether the SDT has correctly identified the standards that require applicability changes or additional guidance for DGRs. Industry generally agrees that the SDT has correctly identified the standards that require applicability changes or additional guidance, including the initial high-priority standards. However, some commenters expressed concerns and disagreements, or requested clarification on the SDT's recommendations, as follows:

At least one commenter questions why the SDT is focusing on multiple versions of the same standard, for example, PRC-005-1.1b and PRC-005-2, instead of focusing on either the currently effective standard or the standard under active development. The SDT must review all current and future versions of each standard requiring applicability changes or guidance to ensure that the appropriate applicability to DGR facilities is applied both currently and for any future versions.

At least one commenter believes the SDT has not made clear what six standards it is referring to on guidance, and notes that within Appendix B there are six standards with the Target Applicability of either "Point where aggregates to > 75 MVA" or "Individual BES Resources / Elements." The six standards referenced in the question are those where guidance may be sufficient to account for the unique characteristics of DGRs, which are identified as Guidance in column C (titled "Area To Change") of Appendix B and specifically are: FAC-008-3, PRC-019-1, PRC-024-1, PRC-025-1, MOD-025-2, and MOD-032-1.

3. Methodology for White Paper Recommendations

The White Paper describes how the SDT recommends addressing DGRs through changes to the applicability section, guidance documentation, or in the applicability of requirements. Industry was asked whether the SDT has correctly identified the best approach for each standard, and the methodology used to prioritize high-, medium-, and low-priority standards. Industry also was asked whether the SDT has correctly prioritized the standards. Industry generally agrees conceptually with the SDT's overall approach to addressing DGRs through changes to the applicability section, guidance documentation, or in the applicability of requirements, particularly the high-priority standards, and with the DGR's prioritization methodology. However, some commenters expressed concerns and disagreements, or requested clarification on the SDT's recommendations, as further discussed below.

One commenter argues that although Inclusion I4 refers to dispersed power resources that are “greater than 75 MVA to a common point of connection at a voltage of 100 kV or above,” for comparability to traditional resources (Inclusion I2), changes in standard thresholds for dispersed resources should apply to points where dispersed resources aggregate to greater than 20 MVA at a common point. The commenter urges the SDT to reconsider and adopt a consistent point where generation aggregates to greater than 20 MVA approach in each of these standards except VAR-002, and that if a 20 MVA threshold applies to I2 generators and that is reliability-based, there would be a reliability gap if a greater than 75 MVA threshold was adopted.

In order to provide consistent requirements for all generation, the SDT believes it is necessary to assess applicability on individual units greater than 20 MVA and aggregate generation greater than 75 MVA, which are thresholds that have been explicitly recognized and approved by FERC as an appropriate threshold for these types of facilities consistent with the revised BES definition.¹ The SDT therefore does not believe it would be appropriate to use different aggregation thresholds absent a robust technical justification to do so. Commenters have not provided a sufficiently compelling technical justification for any other aggregation thresholds, and industry consensus supports what the SDT has proposed. Therefore, the SDT respectfully declines to change the aggregation thresholds identified in the White Paper.

According to at least one commenter, section 4.2.2 of the White Paper notes that the age of DGRs affects their ability to provide reliability services, but that identification of relevant standards as described in the Technical Discussion does not refer to age or ability. It is not clear to the commenter what role those characteristics play in identifying relevant Standards. The SDT has identified and evaluated the applicability of relevant standards primarily with regards to how the reliability of the BES may be affected as a result of applying the requirements of each standard to DGR facilities. The SDT acknowledges that there are certain limitations in the capabilities of some older DGRs due to their age and technology; however, these limitations were not a primary consideration when identifying relevant standards to be addressed.

At least one commenter does not understand why the high-priority states: “High priority was assigned if compliance-related efforts with no appreciable reliability benefit would require not only significant resources but also would require efforts to be initiated by an entity well in advance of the implementation date.” The commenter believes that high priority should have the strongest reliability benefit, not “with no appreciable reliability benefit.” The commenter does agree with the high, medium, and low priority prioritization methodology. The SDT notes that the referenced statement may have been misinterpreted. The following restatement may help. High priority was assigned so that standard or requirement changes would be made

¹ See FERC Order Approving Revised Definition, P 20, Docket No. RD14-2-000.

quickly enough to avoid an entity having to expend inordinate resources prematurely to comply with a standard or requirement that, after appropriate DGR modification, would not be applicable to that entity.

At least one commenter expresses concern that the White Paper is unclear as to “how” it will attempt to implement changes, i.e., the process it will follow. The commenter recommends a new column in Appendix B that addresses the “how.” The SDT agrees that this may be a good suggestion and will consider the appendix modification as suggested.

4. DGR Recommendation to Revise High-Priority Standards

The SDT recommends revising relevant versions of PRC-004, PRC-005, and VAR-002 as high-priority standards. Industry generally agrees that the SDT has correctly identified the high-priority standards that require immediate revision or guidance to account for DGRs. However, some commenters expressed concerns and disagreements, or requested clarification on the SDT’s recommendations, as follows:

F. PRC-004

At least one commenter notes that the applicability of PRC-001, PRC-004, and PRC-005 should be congruent. The SDT intends to address standards similarly where practicable, but in many instances the format of revisions will need to be specific to the standard.

i. Misoperations Reporting for Common Mode Failures

The SDT believes it is not necessary under PRC-004 to analyze protection system Misoperations affecting individual dispersed generating units but is concerned with the potential for unreported Misoperations involving a common mode trip of several generating units. The SDT proposes requiring analysis for potential Misoperation of individual generating units; for example if a trip of greater than 75 MVA nameplate aggregate occurs in response to a system disturbance. The SDT selected the 75 MVA nameplate threshold for consistency and to prevent confusion. As one commenter notes, it is widely agreed that until capability aggregates to that level, BES reliability is not threatened. Industry consensus supports this approach, but some commenters expressed concerns and disagreements, as further discussed in this subsection.

Several commenters express concern that the SDT intends to exclude from PRC-004 dispersed power producing resources, noting, for example, that it is important to know about relay Misoperations in order to maintain system reliability. This extends to individual units that make up an aggregated dispersed power producing resource, especially when one considers the

potential that similar practices would be used in setting each of the protection systems applied to individual units.

The SDT agrees that it is important to know about certain relay Misoperations in order to maintain system reliability. The SDT considered all comments related to Misoperations and wishes to clarify that the applicability of the revised Standard would include cases for which the root cause of the Protection System operation(s) *did or could have affected* an aggregate nameplate rating of greater than 75 MVA of BES Facilities. The SDT also maintains that Misoperations occurring on the Protection Systems of individual generation resources identified under Inclusion I4 of the BES definition do not have a material impact on BES reliability when considered individually; however, the aggregate capability of these resources may impact BES reliability if a large number of the individual generation resources (aggregate nameplate rating of greater than 75 MVA) incorrectly operated or failed to operate as designed during a system event. The SDT also is considering the applicability of events where one or more individual units tripped and the root cause of the operations were identified as a setting error – in these cases, PRC-004 would be applicable if identical settings are applied on Protection Systems for like individual units in the facility with aggregate nameplate rating of greater than 75MVA. Industry consensus supports the SDT’s direction on Misoperations, and the SDT will clarify the White Paper to more accurately reflect SDT intent.

ii. Aggregation Threshold for Misoperations Reporting

Several commenters note that PRC-004’s applicability should be limited to individual protection system components that affect greater than 75 MVA of capability. The SDT agrees it is important to be proactive and assess any Misoperations that could result in a loss of greater than 75 MVA of nameplate generation. This includes Misoperations of Protection Systems that are applied on the individual power producing resources in cases for which the root cause of the Protection System operation(s) did or could have affected an aggregate nameplate rating of greater than 75MVA of BES Facilities. For example, if one or more individual units tripped and the root cause of the operations was identified as a setting error, then PRC-004 would be applicable if identical settings are applied on Protection Systems for like individual units in the facility with aggregate nameplate rating of greater than 75 MVA.

Some commenters believe the aggregate threshold should be lower than 75 MVA, with at least one commenter suggesting a 20 MVA threshold. One commenter notes that if a 20 MVA threshold applies to 12 generators and that is reliability-based, there would be a reliability gap if a greater than 75 MVA threshold was adopted. In order to provide consistent requirements for all generation, it is necessary to assess applicability on individual units greater than 20 MVA and aggregate generation greater than 75 MVA, thresholds that have been accepted by FERC in the context of the BES definition approval. Since commenters have not provided a technically

justified alternative supported by industry consensus, it would not be appropriate to use different aggregation thresholds. Therefore, in the context of PRC-004, it is necessary to assess potential reliability impact on the operation of the interconnected transmission network when Misoperations may result in a loss of greater than 75 MVA of capacity to the BES. This rationale is consistent with the rationale for including in the BES the portion of the collector system that aggregates greater than 75 MVA of dispersed power producing resources.

Some commenters argue that for the vast majority of dispersed generating resources a common mode failure for that dispersed generating resource site would not impact reliability in most cases. One commenter notes that most of these sites are not that large, and because the output is variable, these resources must be backed up with operating reserve to account for their variability. The commenter also argues that there are other NERC standards that require operation of the BES to withstand the next contingency so the loss of entire wind farm or solar array will not be impactful to reliability unless another standard is concurrently violated. The SDT asserts that Misoperations of Protection Systems on a large number of individual resources can have an impact upon BES reliability when the aggregate nameplate capacity of those resources associated with the Misoperation is in excess of an aggregated nameplate rating of 75 MVA, especially in consideration of the N-1, N-2 scenarios in which multiple facilities experience these Misoperations. This rationale is consistent with the rationale for including in the BES the portion of the collector system that aggregates greater than 75 MVA of dispersed power producing resources, and also is supported by industry consensus.

The SDT also notes that it proposes that the protection systems associated with the individual generating resources that contribute to the 75 MVA nameplate rating threshold would become in scope, in regards to PRC-004, when misoperation of Protection Systems on the individual resources is the cause of reaching the threshold.

iii. Other Comments

At least one commenter does not support any language that would effectively bring turbine control systems in scope for PRC-004 in lieu of protection systems, which is the current scope of PRC-004. The SDT does not intend to include turbine control systems in the scope of PRC-004 and will clarify this in the rationale for proposed changes to PRC-004.

G. PRC-005

Some commenters believe that relay maintenance is a vital part of system reliability, and that reducing the applicability of the standard seems counter to good utility practice. The SDT asserts that relay maintenance on individual units would not provide a significant reliability benefit to the BES and therefore should remain at the discretion of the entity as opposed to a

NERC-enforced requirement. Industry consensus supports the SDT's position, so it will therefore decline to adopt the commenters' position.

Other commenters voice agreement and disagreement with the proposed 75 MVA aggregation threshold, which the SDT addressed above in response to PRC-004 comments. The SDT proposes that the scope of PRC-005 be limited to include only the protection systems that operate at a point of aggregation above 75 MVA nameplate rating. If the aggregation point occurs at a component in the collection system, then the protection systems associated with this component would be in scope. This will be clearly addressed in the standard revisions.

Please note that the SDT recognizes that PRC-005-1.1b will be phased out beginning in early 2015. Therefore, the SDT is focusing solely on PRC-005-2 and future versions of PRC-005, and recommends only guidance on PRC-005-1.1b rather than suggesting language changes to the standard. The SDT is working with NERC staff to ensure the appropriate guidance is provided.

H. VAR-002

The SDT notes that question 10 in the request for comments form was misstated, and should have been: "With respect to VAR-002-2b, does the NERC DGR SDT need to provide guidance to ensure dispersed power producing resources individual generator transformers are not subject to the R4 and R5, as they are not used to improve voltage performance at the point of interconnection?"

i. Target Applicability Specific to VAR-002

Some commenters believe the VAR-002 target applicability should be at the point of interconnection. Another commenter suggests that the SDT needs to provide less guidance whereby the GO/GOP can develop their own way of meeting the TOP's voltage schedule, as the SDT should not be so granular to discuss items that are on the collector system, which is not a BES asset. The SDT was careful to consider all target applicability options in assessing all of the potential applicability changes, including VAR-002. In the absence of industry consensus supporting the contrary, the SDT respectfully declines to change its recommendation on the appropriate DGR applicability in VAR-002.

ii. Requirements R3, R4, and R5

Some commenters do not support a blanket exclusion of dispersed power producing resources from Requirements R4 and R5. Commenters believe that information under Requirement R4 has to be provided only upon request of the Transmission Planner and Transmission Operator, and if this information is not necessary, it should not be requested. Similarly, according to

commenters, Requirement R5 is only applicable if the Transmission Operator requests a change to the tap setting, and the Transmission Operator should only do this when necessary; therefore, there is no need to modify the applicability of the standard. Another commenter notes that if the individual generator transformers are below the BES defined level then R4 and R5 should not apply.

At least one commenter argues that the individual generator transformers within the DGR can be excluded in Requirements R4 and R5 in favor of the main aggregating transformer connected to the BES, and that revised applicability should also be included in Requirement R3. The commenter notes that there can be power factor correction capacitors located within each individual generator transformer, and only major sources of Reactive Power that impact the BES should be included in the applicability of Requirement R3.

At least one commenter believes that in general, providing voltage regulation at the point of aggregation is acceptable, but that embedded dynamic devices may affect aggregate voltage performance. The commenter notes that “clarification” needs to address this.

The SDT agrees that a GOP’s voltage controlling equipment Elements differs based on the type of generation facility. Each generation facility may have a different methodology to ensure the facility has an automatic and dynamic response to changes in voltage, to ensure the TOP’s instructions are maintained. It is implied in NERC VAR-001-3 that each GOP and TOP should understand capabilities of the generation facility and the requirements of the transmission system to ensure a mutually agreeable solution/schedule is used. The SDT also believes that pursuant to the NERC Bulk Electric System Definition Reference Document, Version 2, dated April 2014, individual generator transformers are included in the BES. As such, applicability revisions to the standard are required to ensure appropriate application to DGRs as outlined in the White Paper.

iii. Dynamic and Reactive Devices

At least one commenter states that DGRs are often required to install reactive devices as a condition of interconnection. A commenter believes the applicability of VAR-002 should specify how these devices should be treated when establishing voltage schedules and performance expectations, and that if dispersed generation is to include storage devices, care should be taken that requirements are technology neutral. Another commenter states that other reactive devices, such as embedded dynamic reactive devices, may affect aggregate voltage performance and should be addressed.

The SDT agrees with commenters that a GOP’s voltage controlling equipment and Elements differ based on the type of generation facility. Each generation facility may have a different

methodology to ensure the facility has an automatic and dynamic response to changes in voltage, to ensure the voltage schedule is maintained. It is implied in NERC VAR-001-3 that each GOP and TOP should understand capabilities of the generation facility and the requirements of the transmission system to ensure a mutually agreeable solution and schedule is used.

One commenter believes that the standards should apply only to DGRs that are designed to provide voltage and reactive support for the BES, which includes those where voltage or reactive sources (cap banks, reactor banks, static var devices, plant voltage outer-loop control, etc.) which are installed specifically to provide system voltage and reactive support at the point of interconnection or aggregate facility level. The commenter believes that DGRs that do not have such capability by design should be exempted from VAR-002-2b. The SDT disagrees because each generation facility may have a different methodology to ensure the facility has an automatic and dynamic response to changes in voltage, to ensure the voltage schedule is maintained. It is implied in NERC VAR-001-3 that each GOP and TOP should understand capabilities of the generation facility and the requirements of the transmission system to ensure a mutually agreeable solution/schedule is used. In the absence of industry consensus to the contrary, the SDT respectfully declines to adopt the commenter's suggestion.

5. DGR Recommendation to Revise or Provide Guidance on Medium- and Low-Priority Standards

The White Paper identifies several medium- and low-priority standards where applicability revisions are required, or where guidance may be most appropriate to account for the unique characteristics of DGRs. Industry was asked whether the SDT has correctly identified the standards that require modification or additional guidance for DGRs. Industry generally agrees that the SDT has correctly identified the standards where additional guidance is most appropriate. However, some commenters expressed concerns and disagreements, or requested clarification on the SDT's recommendations, as follows:

At least one commenter suggests that the SDT should be as precise as possible in the guidance it provides, since that guidance will be the basis for significant revisions to the numerous standards identified to date. The SDT agrees and intends to do so.

A. MOD

At least one commenter suggests that the SDT correctly identifies some standards, such as the MOD standards, where "the SDT will consider the need to develop guidelines for dispersed generation resource modeling and therefore recommends consulting other groups" that are currently working on these issues, which is inconsistent with the statement in the same section "The existing and proposed modeling standards are sufficient for modeling dispersed generation

resources.” As such, the commenter suggests, it is suggested that the SDT may wish to consult with these groups prior to establishing priorities on some standards. Based on industry consensus on this issue, the SDT believes that the current and upcoming modeling standards are sufficient to address DGR facilities. However, guidance will be provided for this standard with recommendations from other standard development teams and NERC workgroups, and the White Paper will be updated to reflect the SDT’s revised recommendation.

At least one commenter believes that the target applicability for MOD-032 should be on the aggregate facility level. Modeling will be required at both the aggregate and unit level in accordance with BES inclusion I4 consistent with modeling of other multiple unit stations.

Some commenters believe it is important that generators provide accurate models of each individual unit, and that if all units are identical, then providing aggregate information may be sufficient. Commenters noted, however, if units are not identical, then generators should be required to provide individual models.

With respect to MOD-32, the SDT and NERC intend to provide guidance on how to best model DGR facilities. Such guidance should require modeling requirements for each type of DGR within a facility and aggregate model for each reasonable aggregation point. The SDT will update the White Paper to reflect that recommendation.

B. PRC-006

At least one commenter notes that although there was discussion of the NPCC and SERC versions of PRC-006-1, the commenter did not see any discussion regarding the NERC version of PRC-006 in the White Paper, which needs to be included. The commenter is concerned about the coordination of some changes with other drafting teams identified for several requirements in the whitepaper. The SDT focused its initial review on standards applicable to GOs and GOPs. PRC-006 is not applicable to either entity. With regard to PRC-006 requiring modeling and coordination, the generation thresholds in PRC-006-1 are applicable to any generation, regardless of type. As explained above, the SDT and NERC are heavily engaged in coordinating with SDTs developing corresponding standards.

C. PRC-024

At least one commenter believes that PRC-024 needs to pertain to common settings for individual generating resources where incorrectly set protection elements could cause greater than 75 MVA to trip where it is not desired. The SDT asserts that PRC-024-1 should apply at the individual resource level. It is necessary that the protection settings on each individual turbine meet the requirements in PRC-024 to avoid the potential for a common mode trip of generation

in response to a frequency and/or voltage disturbance. Scenarios in which a large number of individual resources (i.e., greater than 75 MVA aggregate nameplate rating) experience a trip in response to a system disturbance could adversely impact reliability of the BES.

One commenter notes that section 5.10.4 relates applicability of PRC-004 to PRC-024 but is not clear what is proposed to be changed in PRC-004. The SDT proposes to include individual resources in the scope of PRC-004 only when the associated protection systems experienced a misoperation that affected or could have affected an aggregate nameplate rating of greater than 75 MVA during a “common-mode failure” type scenario. The reference to PRC-024 was solely meant to convey that similar scenarios would be considered for PRC-024.

One commenter notes that the SDT has determined it is necessary to require that Protection Systems applied on both the individual generating units, as well as any aggregating facilities, are set within the “no-trip zone” referenced in the requirements to maintain reliability of the BPS. The commenter also notes that the SDT says no changes to applicability are required, but states an RSAW or guidance should specify compliance evidence requirements. The SDT asserts that the requirements currently listed in PRC-024 are appropriate to apply to dispersed power producing resources and their associated aggregating Facilities, and therefore is recommending no changes. The SDT is not attempting to infer that compliance requirements can be specified in an RSAW, however RSAWs can establish what compliance related evidence should be utilized for auditing purposes. The SDT recognizes that for the purposes of providing this compliance related evidence, it should be sufficient for an entity to provide evidence for a single sample generating unit within a site as these units are typically set identically, rather than providing documentation for each individual unit. As such the SDT recommends the RSAW be modified as stated above.

D. PRC-025

At least one commenter does not understand why PRC-025 would need to apply to individual generating units in a dispersed generator resource, which would imply that the loss of a single unit at these dispersed generation resource sites would have a reliability impact which would be counterintuitive to this entire standards project. Furthermore, the commenter argues, it is not consistent with the drafting team’s approach that standards that apply to individual generating elements need to be modified. The commenter believes that the White Paper may even contradict the applicability section 3.2.5 of the standard that states “Elements utilized in the aggregation of dispersed power producing resources,” which suggests the standard applies to individual generating elements and not the GOP as a whole. The commenter suggests that either PRC-025 should be added to the standards that need the applicability modified or a better explanation for why it does not need to be modified should be provided in the White Paper.

The SDT does not intend to imply that the loss of a single generating unit at a dispersed generating facility would have a significant reliability impact on the BES. However, the SDT asserts that in scenarios in which a large number of individual resources (i.e., greater than 75 MVA aggregate nameplate rating) experience a trip in response to a system disturbance, there could be an adverse impact to reliability of the BES. This scenario could occur if the load-responsive protective relay in each generating unit were not set as required by PRC-025. Regarding 3.2.5 of the applicability section in PRC-025, the SDT believes that the inclusion of the aggregating equipment in the requirements in this standard does not preclude the need to also apply the requirements to the individual generating resources.

E. TOP-001

At least one commenter argues that TOP-001 applies to all entities registered as GOP, and that there is no defined reporting threshold in the standard. The commenter believes that the recently filed but remanded TOP standards allowed the TOP to determine its data reporting requirements and that PJM requires its intermittent resources to report any change to real power that is equal to or exceeds one MW. For this reason, the commenter does not agree with the SDT relative to this requirement and similar requirements. Based on the PJM Manual 14D, §8.2.4. "...wind resources shall report any outage of one megawatt or more with duration of one hour or longer. Outages shall be submitted on aggregate plant capacity by outage type," the SDT agrees with the commenter that there is no defined threshold for coordination in TOP-001-1a, and PJM requires wind resources to coordinate changes in aggregate plant capacity of greater than one MW for more than one hour. Therefore, the SDT will take commenter's suggestions into consideration prior to posting and balloting any changes to TOP-001-1a.

Another commenter disagrees with the determination for TOP-001-1a Requirement R6 in the White Paper because actions therein would be issued via a directive and are covered under IRO-001-1.1 R8 and TOP-001-1a R3 directive. Thus, according to the commenter, the requirement does not need to apply to DGRs. The commenter further suggests that for TOP-003-1 Requirement R1, the White Paper should explain that the standard should be applied on an aggregate basis and not an individual resource basis, and that there is no need for the Transmission Operator to be aware of individual wind turbine outages, as they only need to know the aggregate outage amount.

The SDT does not agree that TOP-001-1a Requirement R6 should not be applicable to DGRs. There can be a plethora of scenarios in which a DGR could be called on to provide emergency assistance, including the examples provided by the commenter. In addition, another scenario could be voltage support. It should be noted that TOP-001-1a Requirement R6 uses the term 'requested' and not 'directed', which differentiates it from IRO-001-1.1 Requirement R8 and TOP-001-1a Requirement R3. Further, pursuant to IRO-001-1.1 Requirement R8 and TOP-001-1a

Requirement R3, Generator Operators are only required to comply with Reliability Directives issued by the Reliability Coordinator and Transmission Operator, which implies the Reliability Coordinator and Transmission Operator are the only functional entities that can issue a Reliability Directive. TOP-001-1a Requirement R6 allows for any user of the BES to request emergency assistance from others so long as they have implemented comparable emergency procedures. If the SDT were to limit applicability here, a reliability gap may be created by limiting the extent an entity must provide emergency assistance.

F. TOP-003

One commenter believes for TOP-003-1 Requirement R1, the White Paper should explain that the standard should be applied on an aggregate basis and not an individual resource basis. There is no need for the Transmission Operator to be aware of individual wind turbine outages. They only need to know the aggregate outage amount. The purpose of TOP-003-1 Requirement R1 as it relates to GOPs is to ensure TOPs are provided planned outage information on daily basis for any scheduled generator outage greater than 50 MW for the next day. The SDT is unaware of any single wind turbine generator that has at least a 50 MW name plate rating. Therefore, the SDT respectfully declines to adopt the commenter's suggestion.

6. Standards Not Identified as Requiring Applicability Changes or Guidance

Several commenters suggest that the SDT should consider standards and requirements not identified in the White Paper Appendix B for additional guidance or applicability changes. For example, at least one commenter notes that the SDT should review the standards from the perspective of whether a GO/GOP has only dispersed generation resources and no other resources.

The SDT notes that in preparation for the initial posting it has focused primarily on finalizing applicability recommendations on the high-priority standards identified in the White Paper, and has intended to focus on the medium- and low-priority standards after its recommendations on the high-priority standards are posted for comment. Now that the initial posting on some high-priority standards has occurred, the SDT will further consider the comments noted in this section as it reviews medium- and low-priority standards as identified in the White Paper, and will revise its recommendations if supported by sound technical bases and industry consensus.

A. CIP

One commenter believes that the CIP standards must be modified to remove the individual dispersed generator controls from the scope, and references its understanding of the direction in FERC Order 791 to develop actual auditable requirements for low impact BES Cyber Systems.

The SDT intends to recommend guidance for those companies that only operate their turbines from one central location. Individual elements lumped into a BES Cyber System should be addressed. When operations are on a turbine-by-turbine basis, the SDT believes there should not be rigid controls in place. The inability to “swim upstream” should be addressed as well. Further, the guidance intends to address when manufacturers operate or have control of the SCADA environment to conduct troubleshooting and other tasks, and ensure that proper security is in place. The CIP SDT and DGR SDT will coordinate in the next few weeks to develop language for the guidance. The CIP SDT can walk through the revisions to CIP-003-6 Requirement R2 and gather feedback from the DGR SDT to appropriately develop guidance.

As for the commenter’s reference to FERC Order 791 in support of its belief that the CIP standards must be modified to remove the individual dispersed generator controls from the scope, it is unclear how that order should compel the SDT to act contrary to its own technical expertise, the technical expertise of the CIP SDT and clear industry consensus to cause a modification to the CIP standards to account for DGRs. However, the DGR SDT will continue to defer to and coordinate with the CIP SDT to provide further guidance as to what should occur to account for DGRs.

B. EOP

At least one commenter notes that although EOP-004-2 appears to apply to the function and not the individual elements, closer inspection reveals that a GO with DGRs would have to report for each individual unit as the dispersed generation site when there is damage or destruction of its facility that results from actual or suspected intentional human action. The commenter also notes that if EOP-005-2 is reviewed from the perspective of applying the standard to a GOP that only operates DGRs, the commenter questions if the standard should apply at all. A commenter also notes that the definition of Facility would include individual wind turbines since they are classified as part of the BES, which means that if there was intentional damage caused to 1 MVA wind turbine at an applicable dispersed generation resource site, the BA, GO, and GOP would all have to report intentional human damage per EOP-004-2. A commenter believes there are other thresholds for reporting that would apply in EOP-004-2 as well, which need to be reviewed further.

At least one commenter believes that if EOP-005-2 is reviewed from the perspective of applying the standard to a GOP that only operates DGRs, the commenter questions if the standard should apply at all. The commenter notes that if DGRs cannot serve as Blackstart Resources, only one requirement (R18) would apply and the GOP would be burdened with proving that the Blackstart Resource requirements do not apply during every compliance monitoring event. Furthermore, the commenter questions the role a GOP with only DGRs could play in restoration. The

commenter questions if they have no role, why would they need to participate in restoration drills, exercises, or simulations.

As noted above, the SDT will consider these comments as it further reviews medium- and low-priority standards as identified in the White Paper.

C. FAC

At least one commenter suggests that the SDT consider modifying FAC-001-1. For example, one commenter notes that the scope of the standard should be clear that any special connection requirements for dispersed power producing resources (Inclusion I4) should be documented. The SDT will consider this suggestion as it continues to analyze recommended actions on this standard.

Some commenters disagree that issues with FAC-008-3 can be addressed with guidance alone, but other commenters agree. One commenter agrees with the SAR recommendations that the applicability of FAC-008 be limited to the point of 75 MVA or above. Furthermore, one commenter believes the wording of Requirements R1 and R2 is very problematic due to the uncertainty caused by the usage of the term "main step up transformer" as well as the wide variability in the possible location of "the point of interconnection with the Transmission Owner." One commenter recommends simplifying FAC-008-3 R1 and R2 to state that: "The Generator Owner must have a ratings methodology and study for the following: For BES generation not included per BES Definition Inclusion I4, from and including the generator to the point of interconnection to the Transmission Owner system. For BES generation included per BES Definition Inclusion I4, for all Generator Owner owned equipment from the point of aggregation of 75 MVA or greater to the point of interconnection to the Transmission Owner system."

The use of the term main-step-up transformer in R1 and R2 refers to the final GSU, i.e., the last transformer used exclusively for stepping up the generator output prior to the Point of interconnection or, when the POI is before the GSU, the GSU that steps up voltage to transmission line voltage level, and is utilized strictly as a delineation point between R1 and R2. A GO is responsible for determining and documenting facility ratings for the equipment that it owns up to the main step-up transformer, in accordance with R1, as well as all of the equipment it owns from the main step-up transformer to the point of interconnection, in accordance with R2, when the dispersed generation resource facility generation is equal to or greater than 75 MVA. Therefore, guidance may be appropriate to identify the main step-up transformer for a DGR facility.

Facility ratings are required for all elements/components that serve to generate and/or deliver generated electricity to the grid and must 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. The SDT intends to adopt 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. Therefore the SDT respectfully declines to adopt the commenter's suggestion of proposed FAC-008 modifications, which would exclude equipment below the 75 MVA aggregation point.

D. NUC

One commenter disagreed with the SDT position that limiting the applicability of the NUC standard to exclude dispersed generation resources would create a reliability gap, stating that a Nuclear Plant Generator Operator cannot practically rely on variable output resources such as dispersed generation resources to meet its NPIRs. Thus, according to the commenter, limiting applicability does not create reliability gap. Absent industry consensus or other compelling reliability justification to support this commenter's view, the SDT respectfully declines to adopt it.

E. VAR

At least one commenter suggests that the SDT should consider modifications to VAR-001-3 to include language more appropriate for DGRs. The SDT will consider these comments as it further reviews medium- and low-priority standards as identified in the White Paper.

7. Other Comments

Most additional comments make suggestions to improve and clarify the White Paper, which the SDT will consider and incorporate where consistent with SDT intent and industry consensus. Some responses to these comments have been included above.

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 may contact the Director of Standards, Valerie Agnew, at 404-446-2566 or at valerie.agnew@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.²

² The appeals process is in the Standard Processes Manual:
http://www.nerc.com/comm/SC/Documents/Appendix_3A_StandardsProcessesManual.pdf

Index to Questions, Comments, and Responses

1.	The posted white paper and its Appendix B identify 24 standards that may require modifications or guidance to account for the unique characteristics of dispersed power producing resources, including three high priority standards. Do you agree that the DGR SDT has correctly identified the standards that require applicability changes or additional guidance for dispersed power producing resources? If not, please explain.	28
2.	The posted white paper and its Appendix B describe how the SDT recommends addressing dispersed power producing resources through changes to the applicability section, guidance documentation, or in the applicability of requirements. Do you agree that the DGR SDT has correctly identified the best approach for each standard? If not, please explain.	36
3.	The posted white paper and its Appendix B identify six standards where guidance may be sufficient to account for the unique characteristics of dispersed power producing resources. Such guidance may include recognition of aggregating common components as a single “Element” for Facility Ratings and using aggregated capacity value, not individualized units, in the modeling needs. Do you agree that the DGR SDT has correctly identified standards for which applicability changes are not needed, but guidance to clarify application of the standard to dispersed power producing resources would be helpful? If not, please explain.	40
4.	Section 4.3.3 of the posted white paper describes the prioritization methodology the DGR SDT used to assign high, medium, or low priority to its review of each standard’s applicability in the context of dispersed power producing resources, and Appendix B contains the results of that prioritization. Has the DGR SDT appropriately prioritized the standards? If not, please explain.	44
5.	In section 5.10.4 the DGR SDT recommends changing the applicability of PRC-004-2.1a. Has the DGR SDT provided adequate justification or rationale to support revising the applicability of PRC-004-2.1a? If not, please either provide additional reliability-based justification or explain what is needed	48
6.	The DGR SDT believes it is not necessary under PRC-004 to analyze protection system misoperations affecting individual dispersed generating units, but is concerned with the potential for unreported misoperations involving a common mode trip of several generating units. The DGR SDT proposes requiring analysis for potential misoperation of individual generating units, if a trip of greater than 75 MVA aggregate occurs in response to a system disturbance. Do you agree with this approach? If not, please provide specific examples or rationale to support an alternate approach.	50
7.	In section 5.10.6 the DGR SDT recommends making several changes to tailor the applicability of PRC-005 for dispersed power-producing resources. Has the DGR SDT provided adequate justification or rationale to support revising the applicability of PRC-005? If not, please either provide additional reliability-based justification or explain what is needed.	53
8.	With respect to the PRC standards, do you believe a common mode failure which results in misoperation of a large number of the individual generating	

resources at a dispersed generation resource site may impact BES
reliability? Please explain your answer. 56

9. In section 5.13.2 of the white paper, has the DGR SDT provided adequate
justification or rationale to support revising the applicability of VAR-002-2b?
If not, please either provide additional reliability-based justification or
explain what is needed 61

10. With respect to VAR-002-2b, does the NERC DGR SDT need to provide
guidance to ensure dispersed power producing resources individual
generator transformers are subject to the R4 and R5, as they are not used to
improve voltage performance at the point of interconnection? 64

11. Do you have any additional comments to assist the DGR SDT in further
developing its recommendations? 67

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

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
1.	Group	Randi Heise	Dominion NERC Compliance Policy	X		X		X	X				
Additional Member Additional Organization Region Segment Selection													
1.	Louis Slade	Dominion	SERC	5, 6									
2.	Connie Lowe	Dominion	RFC	5, 6									
3.	Mike Garton	Dominion	NPCC	5									
4.	Larry Nash	Dominion	SERC	1, 3									
5.	Randi Heise	Dominion	NPCC	6									
2.	Group	Sandra Shaffer	PacifiCorp						X				
No Additional Responses													
3.	Group	Guy Zito	Northeast Power Coordinating Council										X
Additional Member Additional Organization Region Segment Selection													
1.	Alan Adamson	New York State Reliability Council, LLC	NPCC	10									
2.	David Burke	Orange and Rockland Utilities Inc.	NPCC	3									
3.	Greg Campoli	New York Independent System Operator	NPCC	2									

Group/Individual	Commenter	Organization	Registered Ballot Body Segment																	
			1	2	3	4	5	6	7	8	9	10								
4. Sylvain Clermont	Hydro-Quebec TransEnergie	NPCC	1																	
5. Wayne Sipperly	New York Power Authority	NPCC	5																	
6. Gerry Dunbar	Northeast Power Coordinating Council	NPCC	10																	
7. Mike Garton	Dominion Resources Services, Inc.	NPCC	5																	
8. Matt Goldberg	ISO - New England	NPCC	2																	
9. Michael Jones	National Grid	NPCC	1																	
10. Mark Kenny	Northeast Utilities	NPCC	1																	
11. Christina Koncz	PSEG Power LLC	NPCC	5																	
12. Helen Lainis	Independent Electricity System Operator	NPCC	2																	
13. Ben Wu	Orange and Rockland Utilities Inc.	NPCC	3, 1																	
14. Alan MacNaughton	New Brunswick Power Corporation	NPCC	9																	
15. Bruce Metruck	New York Power Authority	NPCC	6																	
16. Brian Shanahan	National Grid	NPCC																		
17. Lee Pedowicz	Northeast Power Coordinating Council	NPCC	10																	
18. Robert Pellegrini	The United Illuminating Company	NPCC	1																	
19. Si Truc Phan	Hydro-Quebec TransEnergie	NPCC	1																	
20. David Ramkalawan	Ontario Power Generation, Inc.	NPCC	5																	
21. Brian Robinson	Utility Services	NPCC	8																	
22. Ayesha Sabouba	Hydro One Networks Inc.	NPCC	1																	
4.	Group	Joe DePoorter	MRO NERC Standards Review Forum	X	X	X	X	X	X											
	Additional Member	Additional Organization	Region	Segment Selection																
1.	Alice Ireland	Xcel Energy	MRO	1, 3, 5, 6																
2.	Chuck Wicklund	Otter Tail Power	MRO	1, 3, 5																
3.	Dan Inman	Minnkota Power Coop	MRO	1, 3, 5, 6																
4.	Dave Rudolph	Basin Electric Power Coop	MRO	1, 3, 5, 6																
5.	Kayleigh Wilkerson	Lincoln Electric System	MRO	1, 3, 5, 6																
6.	Jodi Jensen	WAPA	MRO	1, 6																
7.	Joseph DePoorter	Madision Gas & Electric	MRO	3, 4, 5, 6																
8.	Ken Goldsmith	Alliant Energy	MRO	4																
9.	Mahmood Safi	Omaha Public Power District	MRO	1, 3, 5, 6																
10.	Marie Knox	MISO	MRO	2																
11.	Mike Brytowski	Great River Energy	MRO	1, 3, 5, 6																

Group/Individual	Commenter	Organization		Registered Ballot Body Segment											
				1	2	3	4	5	6	7	8	9	10		
12. Randi Nyholm	Minnesota Power	MRO	1, 5												
13. Scott Bos	Muscatine Power & Water	MRO	1, 3, 5, 6												
14. Scott Nickels	Rochester Public Utilities	MRO	4												
15. Terry Harbour	MidAmerican Energy	MRO	1, 3, 5, 6												
16. Tom Breene	Wisconsin Public Service	MRO	3, 4, 5, 6												
17. Tony Eddleman	Nebraska Public Power District	MRO	1, 3, 5												
5.	Group	Brent Ingebrigtsen	PPL NERC Registered Affiliates	X		X		X	X						
	Additional Member	Additional Organization	Region	Segment Selection											
1.		Louisville Gas and Electric Company and Kentucky Utilities Company	SERC	3											
2.	1.	PPL Electric Utilities Corporation	RFC	1											
3.	2.	PPL Generation, LLC	RFC	5											
4.	3.	PPL Susquehanna, LLC	RFC	5											
5.	4.	PPL Montana, LLC	WECC	5											
6.		PPL EnergyPlus, LLC	MRO	6											
7.			NPCC	6											
8.			RFC	6											
9.			SERC	6											
10.			SPP	6											
11.			WECC	6											
6.	Group	Cindy Stewart	FirstEnergy	X		X	X	X	X						
	Additional Member	Additional Organization	Region	Segment Selection											
1.	William J Smith	FirstEnergy Corp	RFC	1											
2.	Douglas G Hohlbaugh	Ohio Edison	RFC	4											
3.	Kenneth J Dresner	FirstEnergy Solutions	RFC	5											
4.	Kevin J Querry	FirstEnergy Solutions	RFC	6											
7.	Group	Kathleen Black	DTE Electric			X	X	X							
	Additional Member	Additional Organization	Region	Segment Selection											
1.	Kent Kujala	NERC Compliance	RFC	3											

Group/Individual	Commenter	Organization	Registered Ballot Body Segment											
			1	2	3	4	5	6	7	8	9	10		
2.	Daniel Herring	NERC Training & Standards Development RFC	4											
3.	Mark Stefaniak	Regulated Marketing RFC	5											
4.	David Szulczewski	DO SEE Relay Engineering												
8.	Group	Silvia Parada Mitchell	NEA Joint Commenters (NextEra, Exelon and MidAmerician)	X		X		X	X					
No Additional Responses														
9.	Group	Colby Bellville	Duke Energy	X		X		X	X					
Additional Member Additional Organization Region Segment Selection														
1.	Doug Hils	Duke Energy	RFC	1										
2.	Lee Schuster	Duke Energy	FRCC	3										
3.	Dale Goodwine	Duke Energy	SERC	5										
4.	Greg Cecil	Duke Energy	RFC	6										
10.	Group	Shannon V. Mickens	SPP Standards Review Group		X									
Additional Member Additional Organization Region Segment Selection														
1.	John Allen	City of Springfield	SPP	1, 4										
2.	J.Scott Williams	City of Springfield	SPP	1, 4										
3.	James Nail	City of Independence Missouri	SPP	3										
4.	Stephanie Johnson	Westar	SPP	1, 3, 5, 6										
5.	Bo Jones	Westar	SPP	1, 3, 5, 6										
6.	Tiffany Lake	Westar	SPP	1, 3, 5, 6										
7.	Wes Mizell	Westar	SPP	1, 3, 5, 6										
8.	Robert Rhodes	Southwest Power Pool	SPP	2										
11.	Group	Wayne Johnson	Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing	X		X		X	X					
No Additional Responses														
12.	Group	Jason Marshall	ACES Standards Collaborators						X					

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
Additional Member		Additional Organization		Region		Segment Selection							
1.	Ellen Watkins	Sunflower Electric Power Corporation	SPP	1									
2.	Scott Brame	NCEMC	SERC										
3.	Clem Cassmeyer	Western Farmers Electric Cooperative	SPP	1									
4.	Bob Solomon	Hoosier Energy	RFC	1									
13.	Individual	John Seelke	Public Service Enterprise Group	X		X		X	X				
14.	Individual	Thomas Foltz	American Electric Power	X		X		X	X				
15.	Individual	Amy Casuscelli	Xcel Energy	X		X		X	X				
16.	Individual	Tim Brown	Idaho Power Company	X									
17.	Individual	Barbara Kedrowski	Wisconsin Electric Power Co			X	X	X					
18.	Individual	Jo-Anne Ross	Manitoba Hydro	X		X		X	X				
19.	Individual	John Pearson	ISO New England		X								
20.	Individual	Heather Bowden	EDP Renewables North America LLC					X					
21.	Individual	Scott Langston	City of Tallahassee	X									
22.	Individual	Bill Fowler	City of Tallahassee, TAL			X							
23.	Individual	Karen Webb	City of Tallahassee - Electric Utility					X					
24.	Individual	Larry Heckert	Alliant Energy				X						

If you support the comments submitted by another entity and would like to indicate you agree with their comments, please select "agree" below and enter the entity's name in the comment section (please provide the name of the organization, trade association, group, or committee, rather than the name of the individual submitter).

Summary Consideration: The SDT thanks all commenters for their input and refers the reader to the summary response above.

Organization	Agree	Supporting Comments of "Entity Name"
N\A	N\A	N\A

1. The posted white paper and its Appendix B identify 24 standards that may require modifications or guidance to account for the unique characteristics of dispersed power producing resources, including three high priority standards. Do you agree that the DGR SDT has correctly identified the standards that require applicability changes or additional guidance for dispersed power producing resources? If not, please explain.

Summary Consideration: The SDT thanks all commenters for their input and refers the reader to the summary response above.

Organization	Yes or No	Question 1 Comment
Dominion NERC Compliance Policy	No	Dominion does not agree from a technical perspective. The requirement applies to all entities registered as GOP. There is no defined reporting threshold in the standard. We think the recently filed (but remanded TOP standards) allowed the TOP to determine its data reporting requirements; and, Dominion knows for a fact that PJM requires its intermittent resources to report any change to real power that is equal to, or exceeds, 1 mw. For this reason, we do not agree with the SDT relative to this requirement. Also disagree with 5.11.3.3 Requirement R14 for same reason.
Northeast Power Coordinating Council	No	PRC-004-2.1a should not be modified to exclude dispersed power producing resources. it is important to know about relay misoperations in order to maintain system reliability. This extends to individual units that make up an aggregated dispersed power producing resource, especially when one considers the potential that similar practices would be used in setting each of the protection systems applied to individual units . FERC has explicitly recognized this in its March 20, 2014 Order Approving Revised Definition, where it stated that: “for example, a wind farm larger than 75 MVA can affect reliability if all of its wind turbines trip offline simultaneously after just a slight fluctuation in voltage or frequency. Therefore, because variable generation can impact the interconnected transmission network, we anticipate that wind plant owners whose facilities meet the inclusion I4 criteria who seek to exclude individual wind turbines from the bulk electric

Organization	Yes or No	Question 1 Comment
		system through the exception process will be infrequent. See North American Reliability Corporation, 146 FERC ¶ 61,199 (2014) at P 48.
MRO NERC Standards Review Forum	No	Within Appendix B under column “Target Applicability” there are four (4) different applications; “Point where aggregates to > 75 MVA, Individual BES Resources / Elements, Point of common control, and Aggregate Facility Level. Without these attributes being defined, the industry cannot know if the Standards within Appendix B have the proper “Target Applicability”. Recommend that these terms be included in the NERC Glossary of Terms as they will have a major impact on the applicability of the Standards with reference to dispersed power producing resources. The SDT is encouraged to proceed expeditiously on the identified high priority standards: PRC-004-2.1a, PRC-005 (relevant versions) and VAR-002 so that owners can proceed with implementation of the BES definition and these standards without unnecessary interim work.
NEA Joint Commenters (NextEra, Exelon and MidAmerican)	No	NextEra Energy, Inc., Exelon, and MidAmerican (Joint Commenters NEA) jointly submit these comments. The Joint Commenters NEA individually and collectively own and operate most of the variable generation in North America, and, therefore have unique perspective and expertise on the issues presented in the April 14, 2014 Draft White Paper Proposed Revisions to the Applicability of NERC Reliability Standards NERC Standards Applicability to Dispersed Generation Resources (Draft White Paper). The Joint Commenters NEA appreciates the hard work that is represented in the Draft White Paper, and the technical discussion of the Standards. The Joint Commenters NEA also appreciates the identification of three Standards that for technical reasons should be revised; however, the Joint Commenters NEA are concerned that the White Paper goes much further than the scope of the Standards Authorization Request and recommends that the drafting team focus its efforts solely on three identified Standards. Specifically, the Joint Commenters NEA supports the Standards Drafting Team (SDT) moving

Organization	Yes or No	Question 1 Comment
		<p>forward with revisions to PRC-004-2.1a, PRC-005 (relevant versions) and VAR-002. The Joint Commenters NEA do not support the SDT moving forward on work of any other Standard, because there is not a clear and justified technical reason at this time to require revisions to any more Standards. Specifically, the Joint Commenters NEA recommend that the SDT hand off all other observations in the Draft White Paper to NERC Staff to work with the appropriate NERC technical committees to develop and publish any guidance, etc needed for those Standards.</p>
<p>ACES Standards Collaborators</p>	<p>No</p>	<p>(1) The drafting team has done an excellent job reviewing all of the standards that apply to GOs and GOPs and also identifying some of the ancillary issues such as the interaction of BAs, TOPs, and RCs and dispersed generation resources. However, we do believe a deeper dive is required with some of the standards to identify additional issues and that the standards need to be reviewed from the perspective of whether a GO/GOP has only dispersed generation resources and no other resources. Specific examples of our concerns are discussed below.(2) For example, while EOP-004-2 at first glance appears to apply to the function and not the individual elements, closer inspection reveals that a GO with dispersed generation would have to report for each individual unit as the dispersed generation site when there is “damage or destruction of its Facility that results from actual or suspected intentional human action”. The definition of Facility would include individual wind turbines since they are classified as part of the BES. This literally means that if there was intentional damage caused to 1 MVA wind turbine at an applicable dispersed generation resource site, the BA, GO, and GOP would all have to report intentional human damage per EOP-004-2. There are other thresholds for reporting that would apply in EOP-004-2 as well. These need to be reviewed further.(3) If EOP-005-2 is reviewed from the perspective of applying the standard to a GOP that only operates dispersed generation resources, we question if the standard should apply at all. Can dispersed generation</p>

Organization	Yes or No	Question 1 Comment
		<p>resources be Blackstart Resources? If dispersed generation resources cannot serve as Blackstart Resources, only one requirement (R18) would apply and the GOP would be burdened with proving that the Blackstart Resource requirements do not apply during every compliance monitoring event. Furthermore, what possible role could a GOP with only dispersed generation resources play in restoration. If they have no role, why would they need to participate in “restoration drills, exercises, or simulations” (4) We disagree that limiting the applicability of the NUC standard to exclude dispersed generation resources would create a reliability gap. A Nuclear Plant Generator Operator cannot practically rely on variable output resources such as dispersed generation resources to meet its NPIRs. Thus, limiting applicability does not create reliability gap. (5) We disagree with the determination for TOP-001-1a R6 in the whitepaper. The requirement requires the GOP to provide “all available emergency assistance” (6) From a reliability perspective, what “emergency assistance” would the GOP of a dispersed generating resource be expected to supply. Shut down the units or reduce output? These are examples of actions that would be issued via a directive and are covered under IRO-001-1.1 R8 and TOP-001-1a R3 directive. Thus, the requirement does not need to apply to dispersed generation resources.(6) For TOP-003-1 R1, the whitepaper should explain that the standard should be applied on an aggregate basis and not an individual resource basis. There is no need for the Transmission Operator to be aware of individual wind turbine outages. They only need to know the aggregate outage amount.</p>
Public Service Enterprise Group	No	<p>Although Inclusion I4 refers to dispersed power resources that are “greater than 75 MVA to a common point of connection at a voltage of 100 kV or above,” for comparability to traditional resources (Inclusion I2), changes in standard thresholds for dispersed resources should apply to points where dispersed resources aggregate to greater than 20 MVA at a</p>

Organization	Yes or No	Question 1 Comment
		<p>common point. While these points may be considered non-BES, many standards apply to non-BES Elements, and the BES definition does not prohibit the application of standards to non-BES Elements. For example, Cranking Paths that are less than 100 kV are still subject to EOP-005-2. See Order 773, paragraph 103. In addition UFLS is not in the BES definition, but standards still apply – see PRC-006-2. We note that the team has taken this approach on p. 25 with respect to TOP-002-2.1b, R14. However, Appendix B recommends a threshold at the “Point where [generation] aggregates to >75MVA” for the five “High Priority” standards. Appendix B tracks the recommends in the white paper where each standard is discussed, with the exception of VAR-002 – there is no mention of “Point where [generation] aggregates to >75MVA” and neither should there be. We urge the team to reconsider and adopt a consistent “point where generation aggregates to > 20 MVA” approach in each of these standards (except VAR-002). If a 20 MVA threshold applies to I2 generators and that’s reliability-based, there would be a reliability gap if a > 75 MVA threshold was adopted.</p>
Wisconsin Electric Power Co	No	<p>The CIP standards must be modified to remove the individual dispersed generator controls from the scope. Given the direction in FERC Order 791 to develop actual auditable requirements for low impact BESCS, the argument that CIP doesn’t need to worry about applicability due to no real requirements is a faulty argument.</p>
Manitoba Hydro	No	<p>The SDT should consider modifications to FAC-001-1. Requirement R1 notes that Facility connection requirements for “Generation Facilities” shall be documented. It should be clear in the scope of the standard that any special connection requirements for dispersed power producing resources (Inclusion I4) should be documented. NERC IVGTF 1-3 recommended reactive power requirements be clearly defined as well as any special modeling requirements (eg. aggregation), for example. Frequency response</p>

Organization	Yes or No	Question 1 Comment
		<p>requirements for both under and overfrequency should be documented in FAC-001-1. Also the SDT should consider modifications to VAR-001-3 to include language more appropriate for DGR. Automatic Voltage Regulator in R4 is applicable to conventional synchronous generators and a generic plant-level volt/var controller is more applicable to DGR with a voltage controller controlling the voltage at the point of interconnection. It should be clear that a voltage or Reactive Power schedule can be given by the TO to a DGR. The schedule may be influenced by the technology (eg. switched capacitor banks vs static var compensator). The SDT correctly identifies some standards, such as the MOD standards, where “the SDT will consider the need to develop guidelines for dispersed generation resource modeling and therefore recommends consulting other groups” that are currently working on these issues. This is inconsistent with the statement in the same section “The existing and proposed modeling standards are sufficient for modeling dispersed generation resources”. As such it is suggested that the SDT may wish to consult with these groups prior to establishing priorities on some standards.</p>
ISO New England	No	<p>PRC-004-2.1a should not be modified to exclude dispersed power producing resources. From ISO New England’s perspective, it is important to know about relay misoperations in order to maintain system reliability. This extends to individual units that make up an aggregated dispersed power producing resource, especially when one considers the potential that similar practices would be used in setting each of the protection systems applied to individual units . FERC has explicitly recognized this in its March 20, 2014 Order Approving Revised Definition, where it stated that: “[f]or example, a wind farm larger than 75 MVA can affect reliability if all of its wind turbines trip offline simultaneously after just a slight fluctuation in voltage or frequency. Therefore, because variable generation can impact the interconnected transmission network, we anticipate that wind plant owners whose facilities meet the inclusion I4 criteria who seek to exclude</p>

Organization	Yes or No	Question 1 Comment
		individual wind turbines from the bulk electric system through the exception process will be infrequent. See North American Reliability Corporation, 146 FERC ¶ 61,199 (2014) at P 48.
FirstEnergy	Yes	FE questions the need for both PRC-005-1.1b and PRC-005-2. Why not just focus on PRC-005-2
DTE Electric	Yes	No comments
American Electric Power	Yes	AEP supports the efforts of this drafting team, and believes that the approach proposed in the white paper is reasonable (including the importance of focusing on PRC-004, PRC-005, and VAR-002). AEP will review the additional standards that the drafting team believes are and are-not impacted, and will provide comments on those in future comment periods.
EDP Renewables North America LLC	Yes	Section 4.2.2 of the white paper notes that the age of dispersed generation resources affects their ability to provide reliability services. However, identification of relevant standards as described in the Technical Discussion does not refer to age or ability. It is not clear what role those characteristics play in identifying relevant Standards.
PacifiCorp	Yes	
Duke Energy	Yes	
SPP Standards Review Group	Yes	
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power	Yes	

Organization	Yes or No	Question 1 Comment
Company; Southern Company Generation; Southern Company Generation and Energy Marketing		
Xcel Energy	Yes	
Idaho Power Company	Yes	
City of Tallahassee	Yes	
City of Tallahassee, TAL	Yes	
City of Tallahassee - Electric Utility	Yes	
PPL NERC Registered Affiliates		<p>These comments are submitted on behalf of the following PPL NERC Registered Affiliates: Louisville Gas and Electric Company and Kentucky Utilities Company; PPL Electric Utilities Corporation, PPL EnergyPlus, LLC; PPL Generation, LLC; PPL Susquehanna, LLC; and PPL Montana, LLC. The PPL NERC Registered Affiliates are registered in six regions (MRO, NPCC, RFC, SERC, SPP, and WECC) for one or more of the following NERC functions: BA, DP, GO, GOP, IA, LSE, PA, PSE, RP, TO, TOP, TP, and TSP.</p>

2. The posted white paper and its Appendix B describe how the SDT recommends addressing dispersed power producing resources through changes to the applicability section, guidance documentation, or in the applicability of requirements. Do you agree that the DGR SDT has correctly identified the best approach for each standard? If not, please explain.

Summary Consideration: The SDT thanks all commenters for their input and refers the reader to the summary response above.

Organization	Yes or No	Question 2 Comment
Northeast Power Coordinating Council	No	The applicability of PRC-004 should not be modified as explained above in the response to Question No. 1.
DTE Electric	No	See Question 3 comments
NEA Joint Commenters (NextEra, Exelon and MidAmerican)	No	The Joint Commenters NEA only agree with the recommended revisions to PRC-004-2.1a, PRC-005 (relevant versions) and VAR-002 at this time, and recommend that the SDT focus on and complete these changes as soon as possible. The Joint Commenters NEA also recommend that the SDT also hand off the suggested guidance issues to NERC Staff to work with the appropriate NERC technical committees to develop and publish any guidance, etc needed for those Standards. The Joint Commenters NEA are concerned that some of the issues raised in the White Paper implicate compliance rather than technical issues, and, thus believe stakeholders are best served with these observations being reviewed by the NERC technical committees. For example, TOP-001, TOP-003 and TOP-006 as discussed in the White Paper do not raise to the level of a change to the requirements, and, thus, guidance can be developed by NERC staff and the Operating Committee with regards to how to apply to dispersed power producing resources, as these standards all relate to communication of real-time status, future outage planning and capabilities of dispersed generating resource. While communication of these data may be feasible from a technical perspective this could be construed as a compliance issue that can be resolved through guidance rather than standard revisions.
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf	No	See comments specific to VAR-002 in Q9 and Q10 comments.

Organization	Yes or No	Question 2 Comment
Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing		
ACES Standards Collaborators	No	agree conceptually with the approach overall but have identified a few standards where we disagree with the assessment. Those are documented in the first and third questions.
Xcel Energy	No	<p>We strongly disagree with the assertion that issues with FAC-008-3 can be addressed with guidance alone. We agree with the SAR recommendations that the applicability of FAC-008 be limited to the point of 75 MVA or above. Furthermore, we think the wording of requirements R1 and R2 is very problematic due to the uncertainty caused by the usage of the term "main step up transformer" as well as the wide variability in the possible location of "the point of interconnection with the Transmission Owner." For example, we have instances where the point of interconnection for one of our wind farms is located at the transmission voltage level (>100 KV) with miles of transmission line/Generator Interconnection Facility between the wind farm aggregating system and the point of interconnection. In this instance, application of FAC-008-3 R1 and R2 is fairly straight forward but could be interpreted to require that we apply ratings criteria to non-BES portions of the aggregating system. We also have wind farms where the point of interconnection to the Transmission Owner system occurs at a main disconnect switch on each of the individual feeders at the aggregating system voltage level of 34.5 KV and at a point prior to aggregation of 75 MVA or greater. The Transmission Owner owns the aggregating system from the main disconnect switch on each feeder through a 34.5 KV bus where the feeders aggregate to >75 MVA and the transformer utilized to step up the output to transmission level voltage. For this facility, application of FAC-008-3 R1 and R2 is entirely dependent on the interpretation of the term "main step-up transformer" and results in R1 and/or R2 requiring analysis of non-BES components or which describe components only owned by the Transmission Owner and not owned by the Dispersed Generation Owner. It is recommended that FAC-008-3 R1 and R2 be simplified to state that: "The Generator Owner must have a ratings methodology and study for the following: For BES generation not included per BES Definition Inclusion I4, from and including the generator to the point of interconnection to the Transmission Owner system. For BES generation included per BES Definition Inclusion I4, for all Generator Owner owned</p>

Organization	Yes or No	Question 2 Comment
		equipment from the point of aggregation of 75 MVA or greater to the point of interconnection to the Transmission Owner system."
Idaho Power Company	No	See comments on proposed changes to PRC-004 below. Otherwise the approaches seem reasonable.
Wisconsin Electric Power Co	No	The VAR-002 target applicability should be at the point of interconnection.
ISO New England	No	The applicability of PRC-004 should not be modified as explained above in the answer to Question No. 1.
EDP Renewables North America LLC	No	The SDT should be as precise as possible in the guidance it provides, since that guidance will be the basis for significant revisions to the numerous Standards identified to date. EDP Renewables North America LLC (EDP Renewables) recommends that the SDT define the terms used to specify "Target Applicability" of the Standard revisions. If the terms "Point of common control", "point where aggregated to > 75 MVA", and "Aggregate Facility Level" are intended to have different meanings, these should be specified. A better approach would be to use the Point of Interconnect as the Target Applicability. This is a well defined industry term. Using the other terms could lead to misunderstanding, and/or result in inconsistency due to individuals' interpretations.
MRO NERC Standards Review Forum	Yes	Yes this seems reasonable.
SPP Standards Review Group	Yes	The chosen approaches seem reasonable.
Public Service Enterprise Group	Yes	Yes, with respect as to "what" changes need to be addressed. However, the white paper is unclear as to "how" it will attempt to implement those changes (i.e., the process it will follow). A new column should be added to Appendix B that addresses the how. Here are examples of potential implementation problems that the team should consider: PRC-004-2.1a (Misoperations) is undergoing revisions to PRC-004-3 in Project 2010-05.1 Protection Systems - Phase 1 (Misoperations). How will the team address its needed changes, given that ongoing project? " The same applies to changes in PRC-005 " a team is developing PRC-005-4 in Project 2007-17.3 Phase 3 of Protection System Maintenance and Testing (Sudden Pressure Relays) " And same applies to changes in VAR-002 " a team has just completed a passing successive ballot on VAR-002-3 in Project 2013-04 Voltage & Reactive Control. The question on "how" is administrative, but extremely important. If an existing SDT is working on a standard and a second SDT wants to work on that same standard, but with a different scope, it would be very inefficient to have two teams balloting different versions of the same standard, which must eventually be combined. Only ONE team

Organization	Yes or No	Question 2 Comment
		should be involved in changing a standard at a time. To do that, the existing team's SAR (which is its scope) would need to be amended to include the additional scope of the second SDT. I don't believe the SDT has considered this issue.
Dominion NERC Compliance Policy	Yes	
PacifiCorp	Yes	
FirstEnergy	Yes	
Duke Energy	Yes	
Manitoba Hydro	Yes	
City of Tallahassee	Yes	
City of Tallahassee, TAL	Yes	
City of Tallahassee - Electric Utility	Yes	

3. The posted white paper and its Appendix B identify six standards where guidance may be sufficient to account for the unique characteristics of dispersed power producing resources. Such guidance may include recognition of aggregating common components as a single “Element” for Facility Ratings and using aggregated capacity value, not individualized units, in the modeling needs. Do you agree that the DGR SDT has correctly identified standards for which applicability changes are not needed, but guidance to clarify application of the standard to dispersed power producing resources would be helpful? If not, please explain.

Summary Consideration: The SDT thanks all commenters for their input and refers the reader to the summary response above.

Organization	Yes or No	Question 3 Comment
Dominion NERC Compliance Policy	No	See preceding comments.
MRO NERC Standards Review Forum	No	The SDT has not made in clear what six (6) Standards they are referring too. Within in Appendix B, there are six (6) standards with the Target Applicability of either “Point where aggregates to > 75 MVA” or “Individual BES Resources / Elements” Which six (6) Standards is the SDT referring to?
DTE Electric	No	More clarity would be appreciated regarding the individual vs aggregate approach for the facility ratings Standard. Guidance on the scope of equipment to be rated for DGRs would be helpful.
ACES Standards Collaborators	No	We agree with all standards except PRC-025. We do not understand why PRC-025 would need to apply to individual generating units in a dispersed generator resource. This would imply that the loss of a single unit at these dispersed generation resource sites would have a reliability impact which would be counterintuitive to this entire standards project. Furthermore, it is not consistent with the drafting team’s approach that standards that apply to individual generating elements need to be modified. The whitepaper may even contradict the applicability section 3.2.5 of the standard that states “Elements utilized in the aggregation of dispersed power producing resources” which suggests the standard applies to individual generating elements and not the GOP as a whole. We suggest that either PRC-025 should be added to the standards that need the applicability modified or a better explanation for why it does not need to be modified should provided in the whitepaper.
Xcel Energy	No	We strongly disagree with the assertion that issues with FAC-008-3 can be addressed with guidance alone. We agree with the SAR recommendations that the applicability of FAC-008 be limited to the point of 75 MVA or above. Furthermore, we think the wording of requirements R1 and R2 is very

Organization	Yes or No	Question 3 Comment
		<p>problematic due to the uncertainty caused by the usage of the term "main step up transformer" as well as the wide variability in the possible location of "the point of interconnection with the Transmission Owner." For example, we have instances where the point of interconnection for one of our wind farms is located at the transmission voltage level (>100 KV) with miles of transmission line/Generator Interconnection Facility between the wind farm aggregating system and the point of interconnection. In this instance, application of FAC-008-3 R1 and R2 is fairly straight forward but could be interpreted to require that we apply ratings criteria to non-BES portions of the aggregating system. We also have wind farms where the point of interconnection to the Transmission Owner system occurs at a main disconnect switch on each of the individual feeders at the aggregating system voltage level of 34.5 KV and at a point prior to aggregation of 75 MVA or greater. The Transmission Owner owns the aggregating system from the main disconnect switch on each feeder through a 34.5 KV bus where the feeders aggregate to >75 MVA and the transformer utilized to step up the output to transmission level voltage. For this facility, application of FAC-008-3 R1 and R2 is entirely dependent on the interpretation of the term "main step-up transformer" and results in R1 and/or R2 requiring analysis of non-BES components or which describe components only owned by the Transmission Owner and not owned by the Dispersed Generation Owner. It is recommended that FAC-008-3 R1 and R2 be simplified to state that: "The Generator Owner must have a ratings methodology and study for the following: For BES generation not included per BES Definition Inclusion I4, from and including the generator to the point of interconnection to the Transmission Owner system. For BES generation included per BES Definition Inclusion I4, for all Generator Owner owned equipment from the point of aggregation of 75 MVA or greater to the point of interconnection to the Transmission Owner system."</p>
Wisconsin Electric Power Co	No	We think that the target applicability for MOD-032 should be on the aggregate facility level.
EDP Renewables North America LLC	No	EDP Renewables recommends that the SDT specify how common components should be aggregated into "Elements" to prevent confusion and inconsistency across Standards and regions. Given the variety of technologies lumped under the dispersed generation rubric, a technically justified, technology neutral approach for the aggregation methodology is needed. The critical mass components must attain to be treated as Elements must be clearly established. EDP Renewables requests confirmation that the statement "loss of significant number of units" in section 4.2.3. means "more than 75MVA of aggregated capacity".
PacifiCorp	Yes	

Organization	Yes or No	Question 3 Comment
Northeast Power Coordinating Council	Yes	With respect to MOD-032, it is important that generators provide accurate models of each individual unit. Therefore, if all units are identical, then providing aggregate information may be sufficient. However, if units are not identical, then generators should be required to provide individual models.
FirstEnergy	Yes	
NEA Joint Commenters (NextEra, Exelon and MidAmercian)	Yes	The Joint Commenters NEA agrees that revisions are not necessary and guidance may be helpful for the following standards FAC-008-3, PRC-019-1, PRC-024-1, PRC-025-1, MOD-025-2 and MOD-032-1. As mentioned above, the Joint Commenters recommend that these Standards and associated observations be provided to NERC Staff for additional work with the relevant NERC technical committee to consider any needed guidance. For FAC-008-3 in particular, the Joint Commenters feel that the guidance document should implicate standard requirements for Dispersed Generation from the point of aggregation greater than 75 MVA, up to the point of interconnect as was indicated in the SAR. For FAC-008, the guidance should address the issue in the SAR, which transformer (point of aggregation) is in scope. Also, why in the FAC-008 analysis in the Whitepaper is there reference to SOL™s? The second paragraph of the FAC-008 analysis seems out of scope.
Duke Energy	Yes	
SPP Standards Review Group	Yes	
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing	Yes	Do the "aggregated facilities" in Appendix B refer to > 75 MVA aggregation points? PRC-024 needs to pertain to common settings for individual generating resources where incorrectly set protection elements could cause > 75 MVA to trip where is it not desired. The region specific PRC-006 standards should include mention of common mode effects (e.g. for SERC, one must specify the # MW lost when the UF protection activates - this should include the aggregated MW of all units set similarly). This question is a difficult to answer not knowing what the specific guidance will be.
Idaho Power Company	Yes	
Manitoba Hydro	Yes	We agree this would be helpful however, we suggest using the term "common and electrically similar" dispersed power producing resources rather than "common". Dispersed power producing resources with sufficiently different electrical characteristics from a modeling perspective, may be installed at the same location.

Organization	Yes or No	Question 3 Comment
ISO New England	Yes	With respect to MOD-032, it is important that generators provide accurate models of each individual unit. Therefore, if all units are identical, then providing aggregate information may be sufficient. However, if units are not identical, then generators should be required to provide individual models.

4. Section 4.3.3 of the posted white paper describes the prioritization methodology the DGR SDT used to assign high, medium, or low priority to its review of each standard’s applicability in the context of dispersed power producing resources, and Appendix B contains the results of that prioritization. Has the DGR SDT appropriately prioritized the standards? If not, please explain.

Summary Consideration: The SDT thanks all commenters for their input and refers the reader to the summary response above.

Organization	Yes or No	Question 4 Comment
Northeast Power Coordinating Council	No	PRC-004 and associated relay misoperations are important for reliability. Efforts to reduce it’s applicability should not be a priority.
MRO NERC Standards Review Forum	No	The NSRF does not understand why the High priority states: “High priority was assigned if compliance-related efforts with no appreciable reliability benefit would require not only significant resources but also would require efforts to be initiated by an entity well in advance of the implementation date”. The NSRF believes that High Priority should have a the STRONGEST reliability benefit, not “with no appreciable reliability benefit”. The NSRF does agree with the High, Medium and Low priority prioritization methodology.
NEA Joint Commenters (NextEra, Exelon and MidAmerican)	No	Although the Joint Commenters NEA generally recognize the need to prioritize the SDTs work, it is concerned that the SDT undertook a task that is arguably well outside the scope of the SAR presented to the Standards Committee to include “consideration is necessary for other requirements that affect the interaction of a Balancing Authority (BA), Transmission Operator (TOP), or Reliability Coordinator (RC) with individual BES Elements.” As mentioned above, the Joint Commenters NEA recommends that the SDT focus its efforts solely on the implementations of revisions to PRC-004-2.1a, PRC-005 (relevant versions) and VAR-002.
Xcel Energy	No	We believe clarification of FAC-008-3 requires higher priority. See our comments concerning FAC-008-3 in Questions 2 and 3 above. The remaining concern we have is regarding timing of standard changes. We understand that the SDT has internal

Organization	Yes or No	Question 4 Comment
		<p>completion milestones of balloted standards to be sent to BOT approval November 2014, and February 2015, and this leaves more than a year for final NERC BOT and FERC approval. We understand that based on past completion history, this allows a reasonable timeframe of more than a year to expect these final steps to occur. The effort and focus of this SDT seems outstanding, however, we remain skeptical that so many standards can be changed properly to prevent a 'nonsense' non-compliant condition on the BES Definition effective date of July 1, 2014. We strongly recommend that this SDT, and appropriate members of the BOT and FERC, develop a contingency milestone at an appropriate point in the process, say February 2015, to determine if there are any needed standard revisions in delay, that could create an unnecessary noncompliance condition on the effective date. This effort is expected to be needed to expedite any standards that have been clearly identified as needing dispersed generation applicability exemptions, but are lagging in the process and could create an unneeded issue on the effective date.</p>
Manitoba Hydro	No	<p>In addition, changes to FAC-001-1 should be added to the high priority and changes to VAR-001-3 added to the low priority list. The justification for establishing "High" vs "Medium" priority levels for standards is not clear. It is possible that the choice of wording does not clearly explain the difference between the two levels. It is suggested that these two priority level justifications be reworded for clarity.</p>
ISO New England	No	<p>PRC-004 and associated relay misoperations are important for reliability. Efforts to reduce its applicability should not be a priority.</p>
Dominion NERC Compliance Policy	Yes	<p>Dominion agrees with the prioritization methodology as well as the priority assigned to each standard. However, Dominion does not agree with the Target Applicability assigned to some of the TOP standards (see previous comment) and suggests the SDT be consistent in verbiage used or explain if there is a reason for the differences. Examples are: Point where aggregates to >75MVA and Aggregate Facility Level.</p>

Organization	Yes or No	Question 4 Comment
PacifiCorp	Yes	
FirstEnergy	Yes	Approach seems logical for prioritization of Standards to be revised.
Duke Energy	Yes	
SPP Standards Review Group	Yes	
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing	Yes	
ACES Standards Collaborators	Yes	We agree conceptually with the approach.
Public Service Enterprise Group	Yes	
Idaho Power Company	Yes	
Wisconsin Electric Power Co	Yes	
EDP Renewables North America LLC	Yes	

Organization	Yes or No	Question 4 Comment
PPL NERC Registered Affiliates		
DTE Electric		No comments

5. In section 5.10.4 the DGR SDT recommends changing the applicability of PRC-004-2.1a. Has the DGR SDT provided adequate justification or rationale to support revising the applicability of PRC-004-2.1a? If not, please either provide additional reliability-based justification or explain what is needed

Summary Consideration: The SDT thanks all commenters for their input and refers the reader to the summary response above.

Organization	Yes or No	Question 5 Comment
Northeast Power Coordinating Council	No	The justification provided by the SDT is contrary to FERC’s March 20, 2014 Order (please refer to the response to Question No. 1 above).
Public Service Enterprise Group	No	As stated and supported in response to question 1, we believe the aggregate threshold should be > 20 MVA, not > 75 MVA. If a 20 MVA threshold applies to 12 generators and that’s reliability-based, there would be a reliability gap if a > 75 MVA threshold was adopted.
Manitoba Hydro	No	Section 5.10.4 relates applicability of PRC-004 to PRC-024 but is not clear what is proposed to be changed in PRC-004. The current applicability used in PRC-024 is for all generating units with some technical modifications for asynchronous units. We agree that the applicability should not apply to individual units within a DGR.
ISO New England	No	The justification provided by the SDT is contrary to FERC’s March 20, 2014 Order (please see our answer to Question No. 1 above).
EDP Renewables North America LLC	No	Instead of opening a debate about the relationship between misoperations and common mode trips, PRC-004’s applicability should be limited to individual protection system components that affect > 75 MVA of capability.
Dominion NERC Compliance Policy	Yes	Dominion agrees with the SDT that the Misoperations of any individual generating unit may not have an impact upon the BPS and agrees that it is not necessary to analyze Protective System Misoperations affecting individual generation units of dispersed generation resources. Dominion further supports the analysis of potential Misoperations of dispersed generation resources if the trip is greater than 75 MVA of aggregate occurs in response to a system disturbance. Dominion supports the continued review and study of the potential reporting process for Misoperations required by dispersed generation resources due to the limited information available due to turbine design and technology that would be available for analysis and reporting.
PacifiCorp	Yes	

Organization	Yes or No	Question 5 Comment
MRO NERC Standards Review Forum	Yes	The NSRF agrees and would like to have the wording in the applicability statement that PRC-004-2.1a will only be implemented when there is a trip greater the or equal to 75 MVA, or words to that effect.
FirstEnergy	Yes	How will this Project be coordinated with the current efforts on Project 2010-05.1, Phase I of Protection System Misoperations.
DTE Electric	Yes	
NEA Joint Commenters (NextEra, Exelon and MidAmerician)	Yes	The Joint Commenters NEA believe that the technical basis for the Standard change for I4 BES dispersed generation (i.e., wind and solar) is clear and supported. As such, the Joint Commenters NEA also concur with the SDT's decision to defer to the BES Reference Document's description of I4 "dispersed power producing resources" in the analysis as noted on page 5 of the Draft White Paper, as this description clearly is intended to identify the unique and "non-traditional" variable generation such as wind and solar, rather than traditional resources such as fossil generating resources.
Duke Energy	Yes	
SPP Standards Review Group	Yes	
Southern Company; Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing	Yes	
Xcel Energy	Yes	We agree with SDT that the analysis and the Mitigation of Generator Protection System Misoperations should not extend to each individual generating unit.
Idaho Power Company	Yes	
Wisconsin Electric Power Co	Yes	
City of Tallahassee	Yes	
City of Tallahassee, TAL	Yes	
City of Tallahassee - Electric Utility	Yes	
ACES Standards Collaborators		We believe adequate justification has been provided.

6. The DGR SDT believes it is not necessary under PRC-004 to analyze protection system misoperations affecting individual dispersed generating units, but is concerned with the potential for unreported misoperations involving a common mode trip of several generating units. The DGR SDT proposes requiring analysis for potential misoperation of individual generating units, if a trip of greater than 75 MVA aggregate occurs in response to a system disturbance. Do you agree with this approach? If not, please provide specific examples or rationale to support an alternate approach.

Summary Consideration: The SDT thanks all commenters for their input and refers the reader to the summary response above.

Organization	Yes or No	Question 6 Comment
Northeast Power Coordinating Council	No	We do not agree with this approach because limiting the analysis requirement to a trip of greater than 75 MVA only accounts for very large occurrences that could be unusual. Smaller occurrences, however, may predict an unusual large occurrence that could impact reliability especially when one considers the potential that similar practices would be used in setting each of the protection systems applied to individual units.
Public Service Enterprise Group	No	As stated and supported in response to question 1, we believe the aggregate threshold should be > 20 MVA, not > 75 MVA. If a 20 MVA threshold applies to I2 generators and that’s reliability-based, there would be a reliability gap if a > 75 MVA threshold was adopted.
Idaho Power Company	No	Based on the discussion for TOP-001-1a R7 and TOP-002-2.1b R14, the SDT might consider the analysis of a trip of greater than 20 MVA. The rationale seem similar that if the loss of 20 MVA of generation is necessary to plan for, then it would be significant enough to analyze when it lost.
Manitoba Hydro	No	One of the areas of concern with DGR is the ability to ride through disturbances (e.g. low voltage ride through). We disagree that a trip greater than 75 MVA should only be considered as this would remove a lot of DGR from consideration. The timing of a disturbance may correlate with a period when the output of the DGR is low. In this case, the reliability impact of the lost generation may be low but the misoperation may point to a problem that could occur at any output level. Perhaps, to set a reasonable boundary, protection misoperation that occurs when DGR had an output of 20 MVA or greater should be analyzed in PRC-004.
ISO New England	No	We do not agree with this approach because limiting the analysis requirement to a trip of greater than 75 MVA only accounts for very large occurrences that could be unusual. Smaller occurrences, however, may predict an unusual large occurrence that could impact reliability especially when one considers the potential that similar practices would be used in setting each of the protection systems applied to individual units.

Organization	Yes or No	Question 6 Comment
EDP Renewables North America LLC	No	PRC-004's applicability should be limited to any individual protection system component that affects > 75 MVA of capability. Additionally, the reliability of the Bulk Electric System would not be compromised should the individual generator trips occur over a period greater than sixty cycles. Within the White Paper, the SDT denotes that, "Protection system maintenance on individual generating units at a dispersed generation facility would not provide any additional reliability benefits to the BES." The applicability of PRC-001, PRC-004, and PRC-005 should be congruent.
Alliant Energy	No	We understand the SDT's concern with regard to a common mode trip of several generating units. However, we do not support any language that would effectively bring turbine control systems in scope for PRC-004, in lieu of protection systems which is the current scope of PRC-004.
MRO NERC Standards Review Forum	Yes	The NSRF agrees and would like to have the wording in the applicability statement that PRC-004-2.1a will only be implemented when there is a trip greater the or equal to 75 MVA, or words to that effect.
FirstEnergy	Yes	It is consistent with the requirement for existing BES identified generating units.
DTE Electric	Yes	The applicability statement should be clear in that individual generating unit trips should only be analyzed relative to comon mode trips.
NEA Joint Commenters (NextEra, Exelon and MidAmercian)	Yes	The Joint Commenters NEA believe that the technical basis for the Standard change for I4 BES dispersed generation (i.e., wind and solar) is clear and supported. As such, the Joint Commenters NEA also concur with the SDT's decision to defer to the BES Reference Document's description of I4 "dispersed power producing resources" in the analysis as noted on page 5 of the Draft White Paper, as this description clearly is intended to identify the unique and "non-traditional" variable generation such as wind and solar, rather than traditional resources such as fossil generating resources.
ACES Standards Collaborators	Yes	The SDT's approach is supported by the fact that the threshold for dispersed generation resources is 75 MVA for inclusion in the BES. If the facility impacts the BPS reliability, it will be included in the BES. Thus, a loss of less than 75 MVA of dispersed generation resources by definition cannot impact BPS reliability and, thus, analysis of misoperations of Protection Systems is unnecessary when less than 75 MVA of generation will be lost.
Dominion NERC Compliance Policy	Yes	
PacifiCorp	Yes	
Duke Energy	Yes	
SPP Standards Review Group	Yes	

Organization	Yes or No	Question 6 Comment
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing	Yes	
Xcel Energy	Yes	
Wisconsin Electric Power Co	Yes	
City of Tallahassee	Yes	
City of Tallahassee, TAL	Yes	
City of Tallahassee - Electric Utility	Yes	

7. In section 5.10.6 the DGR SDT recommends making several changes to tailor the applicability of PRC-005 for dispersed power-producing resources. Has the DGR SDT provided adequate justification or rationale to support revising the applicability of PRC-005? If not, please either provide additional reliability-based justification or explain what is needed.

Summary Consideration: The SDT thanks all commenters for their input and refers the reader to the summary response above.

Organization	Yes or No	Question 7 Comment
Northeast Power Coordinating Council	No	In general, relay maintenance is a vital part of system reliability and reducing the applicability of the standard seems counter to good utility practice.
Public Service Enterprise Group	No	As stated and supported in response to question 1, we believe the aggregate threshold should be > 20 MVA, not > 75 MVA. If a 20 MVA threshold applies to 12 generators and that’s reliability-based, there would be a reliability gap if a > 75 MVA threshold was adopted.
ISO New England	No	In general, relay maintenance is a vital part of system reliability and reducing the applicability of the standard seems counter to good utility practice.
City of Tallahassee	No	Tal agrees with the exclusion of aggregate levels of generation below 75MVA. Tal would prefer to see justification of the 75 MVA brightline for the requirement of protection devices to be included under PRC-005.
City of Tallahassee, TAL	No	TAL agrees with the the exclusion of aggregate levels of generation below 75MVA. TAL would prefer to see a justification of the 75MVA brightline for the requirement of protection devices to be included under PRC-005.
City of Tallahassee - Electric Utility	No	TAL agrees with the the exclusion of aggregate levels of generation below 75MVA. TAL would prefer to see a justification of the 75MVA brightline for the requirement of protection devices to be included under PRC-005.
Dominion NERC Compliance Policy	Yes	
PacifiCorp	Yes	
MRO NERC Standards Review Forum	Yes	

Organization	Yes or No	Question 7 Comment
FirstEnergy	Yes	Required reporting of aggregated facility equipment consistent with BES definition is the proper methodology.
DTE Electric	Yes	
NEA Joint Commenters (NextEra, Exelon and MidAmerican)	Yes	The Joint Commenters NEA believe that the technical basis for the Standard change for I4 BES dispersed generation (i.e., wind and solar) is clear and supported. As such, the Joint Commenters NEA also concur with the SDT's decision to defer to the BES Reference Document's description of I4 "dispersed power producing resources" in the analysis as noted on page 5 of the Draft White Paper, as this description clearly is intended to identify the unique and "non-traditional" variable generation such as wind and solar, rather than traditional resources such as fossil generating resources. The drafting team should take care to address only issues related to the unique nature of these non-traditional resources and not duplicate issues already addressed in the PRC-005 standard and its supporting documents such as protection systems at the interfaces.
SPP Standards Review Group	Yes	
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing	Yes	The current revision project to PRC-005 is 2007-17.3 (it is shown incorrectly in the last paragraph of section 5.10.6)
ACES Standards Collaborators	Yes	We believe adequate justification for the revisions have been provided.
Xcel Energy	Yes	
Idaho Power Company	Yes	
Wisconsin Electric Power Co	Yes	The second paragraph in this section in part states "Should these protection elements fail to remove the generating unit for this scenario, the impacts would be limited to the loss the individual generating unit and potentially the next device upstream in the collection system of the dispersed generation resource". If the next device upstream is the collection system and it is greater than 75 MVA then this argument needs additional clarification. If the applicability of dispersed power-producing resources is not changed, we would ask the SDT to provide guidance for the testing of these elements considering the safety, physical constraints and elements that are part of protection systems that were not considered in PRC-005 as it is written. For example, parts of the protection

Organization	Yes or No	Question 7 Comment
		systems of wind turbines cannot be accessed when they are running because of safety reasons. In addition, the system protection elements of some dispersed power-producing resources include molded case circuit breakers, power circuit breakers with trip units, UPSs and other devices that are not currently in PRC-005.
Manitoba Hydro	Yes	
EDP Renewables North America LLC	Yes	The applicability of PRC-001, PRC-004, and PRC-005 should be congruent.

8. With respect to the PRC standards, do you believe a common mode failure which results in misoperation of a large number of the individual generating resources at a dispersed generation resource site may impact BES reliability? Please explain your answer.

Summary Consideration: The SDT thanks all commenters for their input and refers the reader to the summary response above.

Organization	Yes or No	Question 8 Comment
Southern Company; Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing	No	Only in rare cases of multiple contingencies might a misoperation of a large number of the individual generating resources at a dispersed generation resource site impact BES reliability.
ACES Standards Collaborators	No	For the vast majority of dispersed generating resources, we do not believe that a common mode failure for that dispersed generating resource site would be impactful to reliability in most cases. First, most of these sites are not that large. Second, because the output is variable, these resources must be backed up with operating reserve to account for their variability. Third, there are other NERC standards that require operation of the BES to withstand the next contingency so the loss of entire wind farm or solar array will not be impactful to reliability unless another standard is concurrently violated.

Organization	Yes or No	Question 8 Comment
Xcel Energy	No	The aggregate size of the common mode failure must be considered to determine the impact to grid reliability. We suggest the existing threshold value of 75 MVA. In addition, we believe that this would have to do more with a setting associated with PRC-019, PRC-034, and PRC-025. These common mode failures would not be a classical PRC-004 operation analysis because the equipment is not in-scope.
EDP Renewables North America LLC	No	For consistency and to prevent confusion, a specific capability limit (>75 MVA) should be used. It is widely agreed that until capability aggregates to that level, BES reliability is not threatened.
Dominion NERC Compliance Policy	Yes	Dominion believes that a misoperation that results in the loss of dispersed power generation for resources greater than 74MV may have a significant impact on BES reliability. We therefore support a threshold of 75 MVA for such resources under this standard.
PacifiCorp	Yes	The SDT recognizes concern with the potential for reliability impacts involving a common mode failure that leads to (1) loss of a significant number of generating units or the entire facility (White Paper Section 4.2.3 “ Page 8) or (2) the potential for misoperations involving several individual generating units (5.10.4 “ Page 19). PacifiCorp shares this concern. The reliability impacts of a common mode failure and related loss of units at a dispersed generation resource site may affect reliability depending upon the magnitude, timing, and duration of the resource loss. PacifiCorp agrees with the SDT proposal of requiring analysis for potential Misoperation of individual generating units, if a trip of greater than 75 MVA aggregate occurs in response to a system disturbance.
Northeast Power Coordinating Council	Yes	Yes, as explicitly recognized by FERC, a wind farm larger than 75 MVA can affect reliability if all of its wind turbines trip offline simultaneously after just a slight fluctuation in voltage or frequency. In addition, loss of a wind farm as a dispersed generation resource has been observed real time to impact Quebec’s Main

Organization	Yes or No	Question 8 Comment
		Transmission System (the Quebec equivalent of the BES). In Quebec, all the generation or dispersed generation greater than 50MVA connected into 44kV and above are included in its Main Transmission System. Because of the variability of system loads (peak, off-peak, shoulder periods), and the electrical locations of generating resources and their impacts on the BES, what is a large number of generating resources?
MRO NERC Standards Review Forum	Yes	Yes, and recommend that the 75 MVA threshold be used as in PRC-004.
FirstEnergy	Yes	The BES definition has provided technical justification for a threshold of 75 MVA of aggregated generation viewed as having reliability impact on the BES. The PRC Standards focus on loss of this and higher levels of generating resources.
DTE Electric	Yes	BES reliability could be impacted if a concurrent loss of individual generating units aggregating to more than seventy five MVA occurs.
NEA Joint Commenters (NextEra, Exelon and MidAmerican)	Yes	For the purposes of limiting misoperations reporting to an entire site as opposed to individual resources.
Duke Energy	Yes	Duke Energy agrees with the SDTs recommendation that if a trip of generation resulting in the aggregate loss of 75MVA or greater occurs, then an analysis of potential Misoperations of the individual generating units should take place.
SPP Standards Review Group	Yes	With significant numbers of dispersed generation resources currently in existence and more being placed into service daily, the issue of a, misoperation (common mode) of a large number of individual generating resources becomes more probable. Not that such an event would be any more detrimental to the reliability of the BES than the loss of a comparable amount of traditional generation, the impact would be about the same.

Organization	Yes or No	Question 8 Comment
Public Service Enterprise Group	Yes	A common mode failure could be caused by either a consistently applied bad relay setting (more likely) or consistently bad relays (less likely).
Idaho Power Company	Yes	since 75MVA has been determined to be cut off for significance to the reliably operation of the BPS, I would think a loss of any 75MVA generating resource would be considered equally (not considering MVAR capability!)
Wisconsin Electric Power Co	Yes	Agreed as long as the "large number" is greater than 75 MVA.
Manitoba Hydro	Yes	Common mode failures, such as the ability to ride through low voltages or low frequency, can impact reliability. It is possible to have groups of DGR in close electrical proximity that may also experience the same common mode failure, making the system more prone to underfrequency or other reliability event. Ground fault relays that are not coordinated can also result in loss of DGR for BES faults. The impact would depend on the definition of "large", the location of the dispersed generation resource, whether tapped off of a major BES high voltage transmission tie or not, and the type of common mode failure. For example if it is tapped off a BES transmission tie line, special considerations, such as installing a three ring breaker at the POI or adding/modifying an SPS may be necessary to minimize the impact to BES reliability.
ISO New England	Yes	Yes, as explicitly recognized by FERC, a wind farm larger than 75 MVA can affect reliability if all of its wind turbines trip offline simultaneously after just a slight fluctuation in voltage or frequency.
City of Tallahassee	Yes	
City of Tallahassee, TAL	Yes	

Organization	Yes or No	Question 8 Comment
City of Tallahassee - Electric Utility	Yes	

9. In section 5.13.2 of the white paper, has the DGR SDT provided adequate justification or rationale to support revising the applicability of VAR-002-2b? If not, please either provide additional reliability-based justification or explain what is needed

Summary Consideration: The SDT thanks all commenters for their input and refers the reader to the summary response above.

Organization	Yes or No	Question 9 Comment
Dominion NERC Compliance Policy	No	We do not support a blanket exclusion of dispersed power producing resources from requirements 4 & 5. If such resources have been traditionally excluded then we would expect their respective TO and TP to continue such exclusion, if they so choose.
Northeast Power Coordinating Council	No	In general, providing voltage regulation at the point of aggregation is acceptable. However embedded dynamic devices may affect aggregate voltage performance. The “clarification” needs to address this.
MRO NERC Standards Review Forum	No	Section 5.13.2 uses the words of “aggregate facility level”. The NSRF recommends that Facility use a capitol F. This term is used like the Target Applicability which is not defined. Within Appendix B under column “Target Applicability” there are four (4) different applications; “Point where aggregates to > 75 MVA, Individual BES Resources / Elements, Point of common control, and Aggregate Facility Level. Without these attributes being defined, the industry cannot know if the Standards within Appendix B have the proper “Target Applicability”.
Wisconsin Electric Power Co	No	Technical justification should recognize that an individual dispersed generating resource does not provide sufficient reactive resources to provide reliability of the BES.
ISO New England	No	In general, providing voltage regulation at the point of aggregation is acceptable. However imbedded dynamic devices may affect aggregate voltage performance. The “clarification” needs to address this.
EDP Renewables North America LLC	No	Dispersed generation resources are often required to install reactive devices as a condition of interconnection. The applicability of VAR-002 should specify how these devices should be treated when establishing voltage schedules and performance expectations. This may be a Standard that should take into account the capability (“older dispersed generation resources”) of a resource. Further, if dispersed

Organization	Yes or No	Question 9 Comment
		generation is to include storage devices, care should be taken that requirements are technology neutral. Rather than using the Agregate Facility Level, the reference point for maintaining the voltage schedule, usually the Point Of Interconnect, shall be used.
PacifiCorp	Yes	
FirstEnergy	Yes	
NEA Joint Commenters (NextEra, Exelon and MidAmercian)	Yes	The Joint Commenters NEA believe that the technical basis for the Standard change for I4 BES dispersed generation (i.e., wind and solar) is clear and supported. As such, the Joint Commenters NEA also concur with the SDT’s decision to defer to the BES Reference Document’s description of I4 “dispersed power producing resources” in the analysis as noted on page 5 of the Draft White Paper, as this description clearly is intended to identify the unique and “non-traditional” variable generation such as wind and solar, rather than traditional resources such as fossil generating resources.
Duke Energy	Yes	
SPP Standards Review Group	Yes	
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing	Yes	VAR-002-2b should apply only to dispersed generation resources that are designed to provide voltage and/or reactive support for the BES. This includes those where voltage or reactive sources (cap banks, reactor banks, static var devices, plant voltage outer-loop control, etc.) which are installed specifically to provide system voltage and reactive support at the point of interconnection or aggregate facility level. Dispersed generation resources that do not have such capability by design should be exempted from VAR-002-2b.
ACES Standards Collaborators	Yes	We believe adequate justification has been provided.
Xcel Energy	Yes	
Idaho Power Company	Yes	
Manitoba Hydro	Yes	The individual generator transformers within the DGR can be excluded in R4 and R5 in favor of the main aggregating transformer connected to the BES. Revised applicability should also be included in R3. There can be power factor correction capacitors located within each individual generator transformer. Only major sources of Reactive Power that impact the BES should be included in the applicability of R3. Terminology of “automatic voltage regulator (AVR)” could be adjusted to in

Organization	Yes or No	Question 9 Comment
		VAR-002-2b to reflect the technology used in a DGR “ see comments to Question 1.
DTE Electric		No comments

10. With respect to VAR-002-2b, does the NERC DGR SDT need to provide guidance to ensure dispersed power producing resources individual generator transformers are subject to the R4 and R5, as they are not used to improve voltage performance at the point of interconnection?

Summary Consideration: The SDT thanks all commenters for their input and refers the reader to the summary response above.

Organization	Yes or No	Question 10 Comment
Dominion NERC Compliance Policy	No	
Northeast Power Coordinating Council	No	There is no need to modify the applicability of R4 and R5 of VAR-002-2b. The information under R4 has to be provided only upon request of the Transmission Planner and Transmission Operator. If this information is not necessary, it should not be requested and, accordingly, there is no need to modify the standard. Similarly, R5 is only applicable if the Transmission Operator requests a change to the tap setting. The Transmission Operator should only do this when necessary; therefore, there is no need to modify the applicability of the standard. In addition, other reactive devices, such as embedded dynamic reactive devices, may affect aggregate voltage performance and should be addressed.
FirstEnergy	No	If the individual generator transformers are below the BES defined level then R4 and R5 should not apply.
Duke Energy	No	We believe the SDT may have misstated question 10. We do not believe that individual generator transformers should be subject to R4 and R5. The White paper leads the reader to believe that this question should be asking if we agree that individual generators should not be subject to R4 and R5. Please clarify the SDTs intent for this question.
Xcel Energy	No	As worded, this question does not agree with the white paper. Xcel Energy supports the position put forth in the white paper, which states that R4 and R5 of the VAR-002-2b standard would not be applicable to the individual units.
Idaho Power Company	No	
Wisconsin Electric Power Co	No	We would agree if the question included "transformers are NOT subject to the R4 and R5." In addition, has the DGR SDT considered coordination with Project 2013-04, Voltage and Reactive Control, VAR-002-3 on any proposed changes regarding clarifying applicability?
Manitoba Hydro	No	If the applicability is revised as per Question 9, additional guidance should not be needed.

Organization	Yes or No	Question 10 Comment
ISO New England	No	There is no need to modify the applicability of R4 and R5 of VAR-002-2b. The information under R4 has to be provided only upon request of the Transmission Planner and Transmission Operator. If this information is not necessary, it should not be requested and, accordingly, there is no need to modify the standard. Similarly, R5 is only applicable if the Transmission Operator requests a change to the tap setting. The Transmission Operator should only do this when necessary; therefore, there is no need to modify the applicability of the standard. In addition, other reactive devices, such as embedded dynamic reactive devices, may affect aggregate voltage performance and should be addressed.
PacifiCorp	Yes	PacifiCorp agrees that dispersed power producing resource individual generator transformers have traditionally been excluded from VAR-002-2b R4 and R5, as they are not used to improve voltage performance at the point of interconnection, and further agrees with the SDT on the need to clarify the applicability of VAR-002-2b to exclude dispersed power producing resource individual generator transformers from R4 and R5 up to the point of aggregation of 75 MVA, as they are not used to improve voltage performance at the point of interconnection.
MRO NERC Standards Review Forum	Yes	The SDT needs to provide less guidance whereby the GO/GOP can develop their own way of meeting the TOP's voltage schedule. The SDT should not be so granular to discuss items that are on the collector system, which is not a BES asset.
NEA Joint Commenters (NextEra, Exelon and MidAmerican)	Yes	The Joint Commenters NEA believe that the technical basis for the Standard change for I4 BES dispersed generation (i.e., wind and solar) is clear and supported. As such, the Joint Commenters NEA also concur with the SDT's decision to defer to the BES Reference Document's description of I4 "dispersed power producing resources" in the analysis as noted on page 5 of the Draft White Paper, as this description clearly is intended to identify the unique and "non-traditional" variable generation such as wind and solar, rather than traditional resources such as fossil generating resources. In particular there are no reliability benefits to be gained by requiring R4 and R5 to be applicable to the individual generator transformers at a dispersed generation facility; as such, these requirements should be implemented on the aggregating equipment only.
SPP Standards Review Group	Yes	
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern	Yes	It should be clear that the plant step-up transformer (HV side > 100kV) should be included in the R4 and R5, but that any individual resource transformer (HV side < 100kV) is not included in the scope.

Organization	Yes or No	Question 10 Comment
Company Generation; Southern Company Generation and Energy Marketing		
ACES Standards Collaborators	Yes	We believe that guidance or modification to the standard is necessary to ensure that VAR-002-2b only applies to a step-up transformer at the interconnection point to the BES for the dispersed generating resource.
EDP Renewables North America LLC	Yes	It is necessary to exclude these transformers from requirements R4 and R5.
DTE Electric		No comments

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

Summary Consideration: The SDT thanks all commenters for their input and refers the reader to the summary response above.

Organization	Yes or No	Question 11 Comment
Dominion NERC Compliance Policy	No	
Northeast Power Coordinating Council	No	
FirstEnergy	No	
DTE Electric	No	
Duke Energy	No	
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing	No	
Xcel Energy	No	

Organization	Yes or No	Question 11 Comment
Idaho Power Company	No	
ISO New England	No	
City of Tallahassee	No	
City of Tallahassee, TAL	No	
City of Tallahassee - Electric Utility	No	
Alliant Energy	No	
PacifiCorp	Yes	As discussed in White Paper Sections 5.10.11 and 5.10.12 (applicable to PRC-024 and PRC-025), PacifiCorp supports the point made by the SDT, that for the purpose of compliance evidence it may be sufficient to provide the settings of a single sample unit within a site as these units are typically set identically, rather than providing documentation for each individual unit.
MRO NERC Standards Review Forum	Yes	Section 4.2.2, First paragraph, Please note that just because technology exist in short term forecasting capabilities, there are small entities that may not have these expensive tools. There may have been State Laws that mandated the use of dispersed power producing resources within their capacity portfolios. Recommend section 4.2.2, be updated to read that technology exist but may not be employed by entity’s with dispersed power producing resources. Section 4.2.2, Second paragraph, as stated above, the same is true for concerning voltage and frequency system support. The majority of dispersed power producing resources provide real power and voltage which is provided by a fixed power factor control. The SDT’s White Paper needs to take in many system configurations, we are not all created

Organization	Yes or No	Question 11 Comment
		equal.Please note that the NSRF cannot comment on the Priority of Standards listed in appendix B since the Target Applicability terms are not defined.
PPL NERC Registered Affiliates	Yes	The SDT states on p.7 of the Whitepaper that “Dispersed generation resources are often considered to be variable energy resources such as wind and power, but, This description is not explicitly stated in the BES definition.” The SDT’s comment that “NERC and FERC characterize variable generation in this manner,” is helpful, but the absence of a formal definition of Dispersed Generation Resources remains a concern. We request that the term Dispersed Generation Resources be formally defined in the NERC Glossary.
NEA Joint Commenters (NextEra, Exelon and MidAmerican)	Yes	Section 4.2. Dispersed generation resources are often variable energy resources such as wind and solar.Section 4.2.1. The generating capacity of individual dispersed generating modules can be as small as a few hundred watts to as large as several megawatts. The utilization of these small generating units results in a large number of units (e.g., several hundred wind generators or several million solar panels) installed collectively as a single facility that is connected to the transmission system.
SPP Standards Review Group	Yes	We note that the SDT swings back and forth between the BPS and BES. Shouldn’t we restrict ourselves to the BES since the reliability standards are about preserving the reliability of the BES?We don’t quite understand the statement that begins the Section 4.2.1 Design Characteristics. It states “For dispersed power producing resources to be economically viable, it is necessary for the equipment to be geographically dispersed.” Could the SDT expand on this?Use a lower case “t” in “the” in the italicized sentence at the end of Section 5.4.4 FAC-008 “ Facility Ratings. A similar error appears in Section 5.7.7.The opening statement in Section 5.6.2 IRO-005 “ Reliability Coordination “ Current Day Operations mentions only one of the requirements in the standard that applies to Generator Operators which does not provide a total picture of the purpose of the standard. The statement refers to Requirement R10. However, Requirement R6 also applies to

Organization	Yes or No	Question 11 Comment
		<p>Generator Operators regarding the development of action plans to address potential or actual SOL, DCS or CPS violations. Although the conclusion reached in Section 5.6.2 won't change with this additional information, it does provide a fuller picture of what the Generator Operator's responsibilities are with regards to the standard. Something appears to be missing at the end of the 3rd line of the 3rd (R3) paragraph under Section 5.10.1. My guess is that the SDT meant to say "non-operation of an interconnected entity's Protection Systems." However, "protection" is not capitalized in the text, so I'm unsure just what belongs here. Replace the "is" in the 1st sentence of the paragraph under Section 5.10.2 with "has been" such that the sentence reads "which has been adopted by the NERC." There are numerous references to Real-time in the White Paper. Be sure to use the NERC Glossary spelling in those references. Delete the extra "in" in the 6th line in Section 5.11.3.1. The phrase "to the nature" in the 1st bullet of Section 5.11.3.2 doesn't seem to fit nor add anything to the sentence. I'd suggest deleting it. Delete the "the" in the last line of that same paragraph and replace it with "its host". Delete the plural "s" in "resources" in the 1st line of the last paragraph of Section 5.11.3.3. Replace "the SDT project" in the 8th line of the 2nd paragraph under Section 5.11.4.2 with "Project 2014-01". In that same paragraph, delete the "in" in the next to last line in the italicized sentence at the end of the paragraph. These same errors appear in Section 5.11.5. The conclusion in the italicized sentence at the end of Section 5.14.1 is not supported by the sentence immediately preceding it.</p>
ACES Standards Collaborators	Yes	<p>(1) Although there was discussion of the NPCC and SERC versions of PRC-006-1, we did not see any discussion regarding the NERC version of PRC-006. This needs to be included. (2) We are concerned about the coordination of some changes with other drafting teams identified for several requirements in the whitepaper. Some drafting teams have already reached a point where it is too late for coordination. For example, PRC-001 is to be coordinated with the Project 2014-03 TOP IRO drafting team. However, that drafting team is currently preparing documentation to post for public comment in May and will have completed preparations by the time this</p>

Organization	Yes or No	Question 11 Comment
		comment is received. Better coordination with other drafting teams appears to be warranted.
Wisconsin Electric Power Co	Yes	Executive summary of white paper: "the intent of this effort is generally to maintain the status quo for applicability of the standards as they have been applied over time with respect to dispersed generation resources, where the status quo does not create a reliability gap." We disagree with the language about "being applied over time" because each Regional Entity could have been applying it differently. Section 5.10.1 PRC-001-1.1: We agree that the SDT should push this issue on the current Project SDTs, but what happens in the interim? Will the Project teams for 2007-06 and 2014-03 finish in time so that our compliance is not affected? Section 5.10.11 PRC-024: Note that the SDT "has determined it is necessary to require that Protection Systems applied on both the individual generating units, as well as any aggregating facilities, are set within the "no-trip zone" referenced in the requirements to maintain reliability of the BPS." SDT says no changes to applicability are required, but states an RSAW or guidance should specify compliance evidence requirements. We did not think an RSAW could specify compliance requirements; only standards could specify compliance requirements.
Manitoba Hydro	Yes	It is suggested that the data provided in the table in Section 5 (page 11) be rearranged for clearer presentation of the information. Subtotals for "NERC Standards" and "Region-specific Standards (*Out of Scope)" may be placed at the end of their respective categories rather than at the beginning.
EDP Renewables North America LLC	Yes	It would be beneficial if the applicabilities were defined within the NERC Glossary. It would be prudent to include the same applicability recommendation to each of the Project teams (i.e. Project 2014-03 and Project 2014-01), to ensure that both PRC-001 and PRC-005 view the same applicability as it applies to dispersed generation resources.

END OF REPORT