

**Individual or group. (40 Responses)**

**Name (27 Responses)**

**Organization (27 Responses)**

**Group Name (13 Responses)**

**Lead Contact (13 Responses)**

**IF YOU WISH TO EXPRESS SUPPORT FOR ANOTHER ENTITY'S COMMENTS WITHOUT ENTERING ANY ADDITIONAL COMMENTS, YOU MAY DO SO HERE. (2 Responses)**

**Comments (40 Responses)**

**Question 1 (35 Responses)**

**Question 1 Comments (38 Responses)**

**Question 2 (31 Responses)**

**Question 2 Comments (38 Responses)**

Individual
Bangalore Vijayraghavan
Pacific Gas and Electric Comapny
Yes
We support the definition as posted and commend the drafting team for considering the comments from the industry and weighing those industry comments against the FERC directives. Many of the industry comments take a different direction and opinion from the FERC directives and we recognize that the definition is a compromise on the positions of all stake holders. It provides a bright line that will improve reliability and provide a consistent process across North America to address exceptions.
No
Individual
John Falsey
Invenergy LLC
Agree
AWEA
Individual
Thomas Foltz
American Electric Power
Yes
Yes
AEP cannot vote in the affirmative on this project as long as BES elements (measured for compliance) are as granular as the individual dispersed power resource. We do not see the reliability benefit (nor has the project team provided technical justification) of tracking all of the compliance elements for individual wind turbines when the focus should be placed on the aggregate of the facility. Does the RC want to be notified of an outage of each individual wind

turbine in real-time, or a loss of significant portion of the wind farm? If we are not careful, we will have entities at these resources and others monitoring them (BAs, TOPs, RCs) focusing on minor issues that will distract from more relevant reliability needs.

Group

Northeast Power Coordinating Council

Guy Zito

No

The use of the word “capacity” is a concern. Generators might not be considered BES under the definition. Suggested change to I4 as follows: I4 - Dispersed power producing resources that aggregate to a gross total nameplate rating greater than 75 MVA, and that are connected through a system designed primarily for delivering such energy to a common point of connection at a voltage of 100 kV or above. Thus, the facilities designated as BES are: a) The individual resources, and b) The system designed primarily for delivering energy from the point where those resources aggregate to greater than 75 MVA to a common point of connection at a voltage of 100 kV or above.

No

Individual

David Jendras

Ameren

Yes

Yes

(1) When the SDT updates the Reference (Guidance) Document, we request a couple of additions to help clarify Exclusion E3. We ask the SDT to include System Diagram examples with a 138kV Local Network (LN) for which Real Power only flows in (from 138 to 69kV) and embedded within this LN is a 69kV network with multiple generating units. Note that none of these generators are Blackstart Resources or Dispersed power resources. We believe that the left side of your Figure S1-9b could be adapted to do this. Please add the two following examples: (a) First, a 69kV network that serves load at multiple substations and has three different substations each with a single 13.8/69kV GSU for a single 19MVA generator with an aggregate capacity of (3 x 19 MVA =) 57MVA within the entire 138kV LN; and (b) Second, the same diagram as item 1a plus one additional single 13.8/69kV GSU for a single 50MVA generator to provide an aggregate capacity of (3 x 19 MVA + 50 MVA =) 107MVA within the entire 138kV LN . Our understanding is that the 138kV leads to the 138/69kV transformers are all excluded via Exclusion E3; and that neither the entire 69kV network nor any of the embedded generation (aggregate 57 MVA for the first example or 107MVA for the second example) should be included by any BES Inclusion. (2) When the SDT updates the Reference (Guidance) Document, we request one additional item to help clarify Inclusion I2. We ask the SDT to add a new Figure I2-7 similar to Figure I2-6. In this new Figure I2-7, we request that the >100kV / <100kV transformer on the right be removed and connected to another <100 kV location in the network. The generator on the right with GSU high side <100kV should be changed from 25 MVA to 88 MVA. This generator is neither a black-start resource nor a

dispersed power resource and therefore should not be included by Inclusions I3 or I4, and our understanding is that the 88 MVA generator is also not included by Inclusion I2.
Group
Arizona Public Service Company
Janet Smith, Regulatory Affairs Supervisor
No
The definition should not apply to individual dispersed units that are less than 5 MW because independent units less than 5 MW are too small to have an impact on the BES.
Yes
Everything that has been excluded from the BES definition should also be excluded from I5 for reactive sources, because there is no impact to the BES. For example, if a radial system (E1) is excluded because it does not have an impact on the BES, a reactive resource connected at the end of the radial system is not likely to have an impact on the BES either.
Individual
Joe O'Brien
NIPSCO
Yes
We appreciate your consideration of our previous comments and a draft interpretation. However, since such interpretations and a guidance document are already being developed for this draft standard, more clarification is probably needed within the standard itself.
Individual
Kathleen Goodman
ISO New England, Inc.
No
The use of the word "capacity" is a concern. Below is suggested language. I4 - Dispersed power producing resources that aggregate to a total gross nameplate rating greater than 75 MVA, and that are connected through a system designed primarily for delivering such energy to a common point of connection at a voltage of 100 kV or above. Thus, the facilities designated as BES are: a) The individual resources, and b) The system designed primarily for delivering energy from the point where those resources aggregate to greater than 75 MVA to a common point of connection at a voltage of 100 kV or above.
Individual
Russell A Noble
Cowlitz PUD
No
We understand the difficulty of backtracking on past progress. We have voted in the affirmative for the greater objective of not impeding the overall positive progress of the definition. However, we acknowledge the industry has identified a valid concern over I4, and although the SDT is powerless to correct the issue, it is important to record and document

reservations so future efforts in standard development may be facilitated to correct problems with compliance overreach. Most of the I4 facilities that will be included into the BES inherently work against reliability, and this characteristic can't be mitigated by adherence to the current GO/GOP standards in place. For example, assuring an individual generator protection system of a wind/solar unit will not misoperate adds little protection to the BES when the unit is frequently down due to insufficient wind or sunshine. It is a fact that such generation can't be designated as must run, and instead other generation units which can be dispatched must be available on demand to replace lost wind/solar resources. Therefore, we admonish FERC and NERC to recognize the true nature of wind and solar resources as an effort to reduce carbon footprint on the environment and are not intended to replace dispatchable generation, and that compliance without any reliability return should be removed to facilitate its development.

No

Individual

Kenneth A Goldsmith

Alliant Energy

No

No

No - Alliant Energy still believes strongly that including individual dispersed generators (I4) as part of the BES does nothing to maintain/increase the reliability of the BES, and creates an extremely difficult compliance process. It will also create a very large backlog of exception requests, as most dispersed generator owners will request an exception for their generators.

Individual

Gerald G Farringer

Consumers Energy

No

The inclusion and the clarification of the inclusion seem to contradict each other. The highlight portion above seems to indicate inclusion only from the point of aggregation of 75MVA or above. This, in most Wind Park cases would include a collector bus but probably not individual wind turbines. However I4 seems to indicate that the case of a Wind Park that has a total aggregation of 75 MVA, all associated equipment including every individual wind turbine would be included. There is inconsistency. Technical justification should be needed to include resources in the BES, not the other way around. Is there a real expectation that a single collector circuit containing ten, 1.2MW wind turbines can cause cascading or uncontrollable outages of the surrounding system? It is extremely doubtful. Consumers Energy supports the inclusion of equipment where the aggregation of 75 MVA or more connects to the Bulk Electric System at voltages of 100kv or greater. There is a clear indication here that a single contingency can remove the total of the capacity from the system where with the proposed inclusion does not. Administrative burden and compliance risk must be weighed against reliability gain. Including individual wind turbines rather than the aggregate of the wind farm increases such burden without any reliability gain.

No
Individual
Joseph G DePoorter
Madison Gas and Electric Company
No
MGE does not understand why individual dispersed power resources remain to be include as we clearly stated during the last comment period. The SDT has stated that no technical rational to support there removal. FAC-001 and FAC-002 are mandatory enforceable Standards that entity's must follow. These Standards provide the justification as pointed out in our last set of comments. The SDT has stated in order to fix this, an addition SAR would be submitted (such as the GOTO) to "fix" this issue. Why would the ERO what to expend resources to fix something after the fact when the SDT has the ability to fix it now. The removal of I4a will solve this issue. If individual resources need to be in based on system instability issues, then this can be addressed at a later date, once it is proven that individual resources need to be considered part of the BES and the individual resources cause BES instability.
No
Group
North Carolina Electric Membership Corporation
Scott Brame
No
We have voted affirmative for this project in the past but are now changing our vote to negative based on the changes made to I4. We feel that the drafting team has further complicated the BES definition by the proposed language in Inclusion I4. According to the Phase 1 definition, dispersed power producing units would only be included if the units reached the 75 MVA aggregate threshold. There is nothing in the Phase 1 definition that would include collector system equipment. The Phase 2 definition is problematic because there is uncertainty regarding the scope of equipment that that would be included as a portion of the collector system. This ambiguity has raised concerns that regional compliance staff may ultimately determine a different set of equipment is included in the BES than the registered entity will leaving the burden on the registered entity to argue why certain elements should not be included in the BES. This will lead to inconsistent compliance outcomes. We cannot support a definition with vague and ambiguous language that could result in negative compliance implications during registration, audits, and enforcement processes. Furthermore, we do not believe any part of the collector system should be included in the definition.
No
Individual
RoLynda Shumpert
South Carolina Electric and Gas

Yes
No
Individual
Nazra Gladu
Manitoba Hydro
Yes
No
Individual
Marie Knox
MISO
Agree
Madison Gas & Electric
Individual
Alice Ireland
Xcel Energy
No
In several prior comment periods, we have asked many technical questions of the BES SDT, and continue to get generic non-substantive replies. While a majority of our questions still remain unanswered, we have elected to not submit them again. However, we believe it is especially important to understand the SDT's response to this question. When considering a wind farm that would qualify as BES under the currently drafted version, it seems inconsistent that a 2 MVA individual dispersed generator is deemed significant to reliability, while the equipment that is utilized to connect a sub-set of the individual dispersed generators totaling to <75 MVA is deemed not significant to reliability. Please explain the technical rationale for concluding that an individual dispersed generating asset rated at 2 MVA is important to grid reliability but that a collector feeder for a sub-set of these generators which may impact up to 35 (70 MVA) of these individual dispersed generating assets is not critical to reliability?
Yes
2. We appreciate that the BES SDT acknowledges that numerous existing and pending standards will need to be reviewed and revised to clarify standard applicability to individual generating units. However, we do not believe that implementation of the BES definition should go forward until this review and revision of other standards has been completed. Therefore, we recommend the implementation plan for the BES definition be contingent upon the completion of modification to applicable GO/GOP requirements. Otherwise, there will simply be too much ambiguity in the requirements as they apply to individual dispersed generating assets, there will be too much compliance effort spent on trying to apply these ambiguous requirements with no commensurate gain in reliability, and in the end many of the requirements will change and possibly no longer apply.
Individual

Thomas Breene
WPSC
No
As our previous comments have indicated, we agree with including the Generating stations with dispersed generation from the point of aggregation to 75 MVA as I4-b does. We also agree with the statement made on the BES Phase II webinar of August 21 that this is the point where the dispersed power plant is significant to the reliability of the BES. We continue to disagree with including the individual resources themselves since, as indicated on the previously referenced webinar, they are not significant to the reliability of the BES. The technical rationale for not including dispersed power producing resources has been included in many past comments and will not be restated here. Compliance with most protection system and equipment rating standards is not possible for individual BES wind turbines without revisions to the standards, or at best without significant resources to apply existing standards to individual units. Some of the standards effected include PRC-004-2a, FAC-001, FAC-003, FAC-008-3, MOD-024, MOD-025, MOD-026, MOD-027, PRC-005, PRC-006-SPP-01, PRC-019, PRC-024, PRC-025, and TOP-003. But we continue to stress that including an I4a will require significant resources in personnel and modifications or result in fast-tracking Standard changes to make compliance possible with no improvement in reliability of the BES. These resources would be better utilized elsewhere to actually improve reliability.
No
Group
ACES Standards Collaborators
Ben Engelby
No
We feel that the drafting team has further complicated the BES definition by the proposed language in Inclusion I4. According to the Phase 1 definition, dispersed power producing units would only be included if the units reached the 75 MVA aggregate threshold. There is nothing in the Phase 1 definition that would include collector system equipment. The Phase 2 definition is problematic because there is uncertainty regarding the scope of equipment that that would be included as a portion of the collector system. This ambiguity has raised concerns that regional compliance staff may ultimately determine a different set of equipment is included in the BES than the registered entity will leaving the burden on the registered entity to argue why certain elements should not be included in the BES. This will lead to inconsistent compliance outcomes. We cannot support a definition with vague and ambiguous language that could result in negative compliance implications during registration, audits, and enforcement processes. Furthermore, we do not believe any part of the collector system should be included in the definition.
No
Individual
Patrick Farrell
Southern California Edison Company

No
<p>Phase 2 of the BES definition characterizes dispersed power producing resources as being “small-scale” power generation technologies. However, although this characterization is currently the norm, that could easily change in the future. As written, I4 creates an ambiguity for Dispersed Power Producing Resources that are greater than or equal to 75MVA, because these generation resources appear to be included within the BES under both the I2 and I4 inclusions. The problem this creates is that I2 and I4 address the connection facilities differently, with I2 beginning at the generator terminals, while I4 begins at the point where the resources aggregate to greater than 75 MVA. SCE believes that the SDT should clarify which of these inclusions should apply to dispersed power producing resources greater than or equal to 75MVA. SCE is also concerned about how I4 could potentially discourage the development of common points of interconnection (i.e. collector substations) for multiple projects in queue, especially in relation to the E1 and E3 exclusions. In SCE’s experience, “plans of service” that include common collector substations for multiple generation projects can be an effective way to encourage development of renewable resources in renewable-rich areas. However, such resources develop and interconnect as individual projects under separate development paths. The first distributed generation projects connecting to such stations may find their resources initially classified as non-BES if the aggregate generation is less than 75 MVA. However, later projects connecting to the same common point could find the BES status changing as additional generation projects materialize at the same collector substation. SCE is concerned that this will discourage dispersed generation developers from pursuing common points of interconnection at collector substations built for such purpose in renewable rich areas. The aggregate total of the projects further down the interconnection queue could also trigger system upgrades, based on TPL studies for which the owners of these projects would be responsible.</p>
Yes
<p>The 75 MVA hurdle is nothing more than an arbitrary number being used to denote/provide a threshold for identifying the amount of generation that has a significant effect on the BES. This number does not consider the most significant part of what should be encapsulated in the definition which is what the “function” of the facility(ies) are with respect to a bulk electric system operated as an integrated network.</p>
Individual
Thomas Gianneschi
Alcoa, Inc.
Yes
<p>An additional concern the standards development team has not adequately addressed is the technical justification for placing compliance requirements on newly registered industrial facilities resulting from the adoption of this definition.</p>
Group
SPP Standards Review Group
Robert Rhodes

No
While we understand that FERC has basically directed the drafting team to include individual dispersed power producing units in the BES, we are concerned about the need for coordination between drafting teams for other reliability standards, such as PRC-004, PRC-005, FAC-008, etc, which may be impacted by the inclusion of these generating units into the BES. Have steps been taken to ensure that this coordination has taken place?
No
Group
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia
Wayne Johnson
No
Eliminate Inclusion I4.a. If an individual generating element of a dispersed power producing facility is 20 MVA or larger at a facility rated at 75 MVA or larger it should be included. At Inclusion I4.b, Southern disagrees with the premise that BES elements (measured for compliance) should be applied to the individual dispersed power elements. We do not see the reliability benefit of tracking all of the compliance elements for individual wind turbines when the focus should be placed on the aggregate of the facilities. The proposed approach is similar to applying NERC requirements to the individual coils of a large generator. The subject inclusion should limit the applicability of the BES to the collector bus and the capacity at this point should be 75 MVA or greater to qualify as a BES element.
Yes
Southern Transmission believes that Exclusion E3 should include a limit on the size of a Local Network (LN). The facilities that will comprise these LNs are currently part of the BES and subject to all applicable standards. To allow these facilities to now be excluded from the BES without regard to some size limitation could result in negative impacts on the BES in the future. Southern Transmission believes that without placing a size limitation on such a network, a single contingency could result in significant flows across the BES to serve the LN from a different location. Additionally, there is concern that the exclusion has no requirement for power to only flow into the LN for N-1 conditions. Southern Transmission does agree that there may be limited locations where such an exemption could be appropriate, but would prefer to see the facilities initially included in the BES and have the Transmission Owner go through a review process with the Regional Reliability Organization to provide justification for classifying facilities as a LN.
Individual
Gary Kruempel
MidAmerican Energy Company
No
MidAmerican continues to believe that individual dispersed generating units should be excluded from Inclusion I4 of the revised BES definition. MidAmerican does not agree with the SDT's characterization in the question that no technical rationale was offered by any stakeholder to support removal of the individual units from Inclusion I4. It is MidAmerican's

understanding that at least several commenting entities have provided sound technical arguments to support the exclusion of individual dispersed generating units. While it may be the case that the SDT does not believe the technical justifications offered by entities have been compelling, the SDT has not provided a complete analysis to the industry refuting each of the technical arguments provided by registered entities. After all, a primary objective of Phase II of the BES definition project was to carefully consider additional technical arguments that would further refine the revised definition, including with regard to individual dispersed generating units. MidAmerican agrees with the SDT that one suitable solution to address the inclusion of individual dispersed generating facilities may be via adjustments to individual standards' applicability sections. For example, Reliability Standard MOD-025-2 (pending approval at FERC) includes a provision addressing real power testing for variable generating facilities. In order to accomplish the recommended case-by-case review, however, a Standard Authorization Request would likely need to be prepared to commence the NERC standards development process for each potentially impacted standard. In that case, it is more appropriate and efficient to exclude such facilities from Inclusion I4 and then initiate changes to a limited number of impacted standards that should actually apply to individual dispersed generators, rather than initiate individual projects to modify a larger pool of standards for which the application to such generators is not appropriate to promote reliability.

No

Individual

Randi Nyholm

Minnesota Power

No

Minnesota Power does not believe that 2 MW generators, whether or not they aggregate to 75 MW, should be included in the definition of Bulk Electric System when the distribution transformers that control multiple units are not included. Furthermore, a non-contiguous Bulk Electric System is problematic for maintaining reliability.

Group

Dominion

Louis Slade

Yes

No

Individual

Don Streebel

Idaho Power Co.

Yes

Yes

While we still do not agree with the categorical inclusion of individual dispersed power producing units into the BES, we do recognize the SDT's good faith effort to comply with FERC

Orders 773 and 773-A. We understand that modeling of dispersed power producing resources in WECC base cases will follow regional requirements governed by regional standards.

Group

PPL NERC Registered Affiliates

Brent Ingebrigtsen

Yes

These comments are submitted on behalf of the following PPL NERC Registered Affiliates (PPL): 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. 1. The PPL NERC Registered Affiliates previously commented that the language of the proposed BES definition is subject to multiple interpretations and is therefore difficult to apply correctly without the Reference Document. The Reference Document is not complete or final for the Phase 2 BES definition, however. The Reference Document contains a disclaimer on p.1 that states "...this reference document is outdated. Revisions to the document will be developed at a later date to conform to the definition being developed in Phase 2." In response to the PPL NERC Registered Affiliates' concerns regarding the unavailability of a Reference Document to reflect the Phase 2 BES definition, the SDT stated in response that it "did not intend the posted version to represent a full implementation of Phase 2 as Phase 2 isn't complete." The PPL NERC Registered Affiliates are concerned by this response because, unless it is clarified, the existing Phase 1 Reference Document could be interpreted to bring into the Phase 2 BES definition facilities that are not, and do not need to be, part of the BES. For example, the words in the existing Reference Document may imply that NERC registration for very small, standby, non-Blackstart Resource generators feeding the auxiliary buses of generation plants for emergency purposes is required. Specifically, Figure I2-5 of the Reference Document states that all units in a plant are part of the BES regardless of size, if the plant totals more than 75 MVA, if they "contribute to the gross aggregate rating of the site." The SDT said in response to our earlier comments regarding small standby diesels that, "The intent of the SDT is that the precedent will not change how the identified equipment is classified." However, Figure I2-5 of the Reference Document appears to do exactly that. If for example a 500 MW plant has a 2 MW diesel generator feeding the 4kV bus for emergency purposes (but not as a Blackstart Resource), the facility could be said to have a gross aggregate nameplate rating of 502 MW when the diesel is running – the aggregate nameplate rating has increased. Fig. I2-5 moreover includes in the BES units that feed transformers with a high-side voltage less than 100 kV, if their output is eventually stepped-up to a plant outlet that is > 100 kV. While, one could cite Fig. S1-9b, as indicating that generators feeding a bus that is exclusively an importer of power are not part of the BES, it would be far better to state matters explicitly in the first place. The contribute-to-aggregate-capability language of the present (and outdated) Reference Document does not appear in the BES definition and it is unclear. Item I2b of the BES definition should therefore be accompanied by a footnote saying that, "Standby and emergency generators

that feed auxiliary buses are not considered in determining the plant/facility aggregate nameplate rating,” or “Standby and emergency generators are not considered in determining the plant/facility aggregate nameplate rating if they feed an auxiliary bus that is a net importer of power.” Further, an example should be added to the Resource Document that shows that Emergency Diesels and standby units that feed auxiliary buses that are net importers of power are not part of the BES (unless they are Blackstart Resources). 2. The PPL NERC Registered Affiliates also previously commented that the generic term "nameplate rating" should be replaced by the NERC-defined term "Facility Rating." The SDT declined to make this change, because it stated Facility Ratings, “fluctuate from period to period. “ The PPL NERC Registered Affiliates continue to believe that the use of the term “Facility Rating” is more appropriate. Consider for example four simple-cycle CTs rated at 19 MVA each (76 MVA total) that are connected to a 115 kV line through a single GSU rated at 72 MVA. This in a 72 MVA plant (because of the most limiting component) and would therefore not presently be part of the BES, but it could be pulled-in depending on whether one focuses on the nameplate rating of the generators or the most-limiting component (in this case the GSU). The Reference Document suggests that the former approach applies, because in every single depiction of generation units it cites only generator ratings and ignores GSU capability. Furthermore, using generator nameplate ratings can in certain circumstances lead to confusion because some generators (e.g., simple cycle CTs) can have multiple ratings (e.g., baseload, peaking and emergency ratings). To avoid this confusion, the proposed definition should be based on the “nameplate rating of the most-limiting component,” which in the example here presented is 72 MVA (and is also the Facility Rating). Therefore, Inclusion I2 should be revised to read as follows: a) Gross nameplate rating of the most-limiting component of an individual unit greater than 20 MVA, Or, b) Gross aggregate nameplate rating of the most-limiting component(s) of a plant/facility greater than 75 MVA Additionally, the Reference Document should be changed to provide at least one example of GSU MVA values setting the most limiting criterion.

Individual

Barbara Kedrowski

Wisconsin Electric Power Company

No

Wind generators and solar panels are intermittent resources that are not as dependable as other sources for supporting grid reliability. A sudden drop in wind speed or solar intensity will instantaneously reduce the MW output of all the individual wind turbines or solar panels in the area. It follows then that a single wind turbine or solar panel could not be an Element or Facility necessary for the reliable operation and planning of the interconnected bulk power system. However, common mode failure of multiple turbines or solar panels could be significant to the reliability and planning of the BES. Efforts should be focused on preventing / mitigating the loss of multiple generators with an aggregated capacity of greater than 75MVA. Therefore the elements necessary for the reliable operation and planning of the interconnected bulk power system are the devices that are located where the power is aggregated, and not the individual generators. If individual small generators that are a part of

an aggregated facility of 75 MVA or larger (e.g. a 75 MVA wind or solar farm) are considered a part of the BES due to that aggregation, the NERC Standard requirements should only be applied to the aggregation (e.g. the interconnection with the transmission system) and should not be applied to individual generators of less than 20 MVA. This would be consistent with the NERC registration criteria for single and multiple generators at a site.

Individual

Bret Galbraith

Seminole Electric Cooperative, Inc.

No

The drafting team has proposed revised changes to a requirement concerning distributed generation. In particular, when distributed generation, e.g., wind turbines, accumulate to more than 75 MVA, only the turbines and the equipment collecting/transferring more than 75 MVA is covered as BES equipment. This allows for scenarios where non-BES equipment might be located between two separate groups of BES equipment. Seminole does not believe this is FERC's intent. Seminole acknowledges that FERC did not specifically address distributed generation in past orders when attempting to correct the BES language that resulted in having non-BES equipment separate groups of BES equipment. However, Seminole does not believe the drafting team's reasoning is sufficient for this exception. Seminole believes that all of the equipment in this scenario should be either BES-regulated or non-BES (non-NERC) regulated.

Additionally, Seminole is re-submitting the following comments from past ballots, because Seminole still believes that these comments are practical requests that should be incorporated into the BES definition. (1) The terms "plant" and "facility" are not defined and are ambiguous. Please provide quantitative and/or qualitative factors that an entity can utilize in determining what is a plant or facility. See Inclusion I2. Seminole acknowledges that there is draft guidance covering these terms; however, Seminole reasons that descriptive language covering these terms should be passed in conjunction with the BES definition. (2) The following note will be placed in the Reference document: "Dispersed power producing resources are small-scale power generation technologies using a system designed primarily for aggregating capacity providing an alternative to, or an enhancement of, the traditional electric power system." Please strike the phrase "or an enhancement of," as it is more of a persuasive statement than an objective statement. (3) In Exclusion E1(c), please clarify that reactive devices, such as capacitor banks, can also be included in this section. Reactive devices are differentiated from real power devices in Inclusion I2, so we request clarification that reactive devices can be included in Exclusion E1(c), i.e., please add clarification to the definition.

Group

Duke Energy

Michael Lowman

Yes

Duke Energy supports the proposed clarifications to I4 made by the SDT.

No
Individual
Michael Goggin
American Wind Energy Association
No
<p>1. The technical rationale for not including individual generators in the BES definition is that these individual generators cannot affect BES reliability. Whatever technical rationale drove the drafting team’s decision to not include the collector array components in the BES definition would also dictate that the individual turbines connected by that collector array should also not be included in the BES definition. We cannot think of any technical rationale that would justify including individual wind turbines in the definition but not including the collector array that aggregates those individual generators. Regardless, the burden for providing technical rationale should fall on the drafting team to demonstrate that including individual generators will improve electric reliability. That burden has not been met, and the standards drafting team has made no attempt to provide that rationale, despite repeated requests to do so. As explained below, that burden cannot be met, as there is no benefit to including individual generators, and including them in the definition is only likely to provoke significant confusion that distracts from real efforts to improve electric reliability. The only compelling reason for applying BES standards to individual dispersed generators would be if there were a real risk of an abrupt common mode failure affecting a large share of the dispersed generators in a &gt;75 MVA wind plant. However, per FERC Order 661A, wind turbine generators already comply with voltage and frequency ride-through standards that are far more stringent than those that apply to other types of generators. As a result, if a common mode failure caused by a grid disturbance were to affect the wind turbines in a &gt;75 MVA wind plant, the impact on the wind plant would be irrelevant for grid reliability because the voltage and/or frequency deviation would have already caused most if not all of the conventional generators in the grid operating area to trip offline. While weather-driven changes in wind speed can significantly change the aggregate output of a wind plant, those changes in output occur too gradually to pose a risk to bulk power system reliability, and regardless such changes in output would not be regulated or mitigated by BES-relevant standards. No compelling rationale has been offered for why including individual dispersed wind turbine generators in the BES definition will improve grid reliability. Until one is offered, we will continue to oppose the inclusion of individual wind turbine generators in the BES definition. 2. We request clarification on the intent of the FERC direction provided in Orders 773 and 773-A regarding inclusion of dispersed generation, as we disagree with the standards drafting team’s interpretation that those orders required the inclusion of individual dispersed generators. After careful study, it appears that the proposed standard for the I4 inclusion of dispersed generation is broader in scope than the intent as stated in the Orders. The critical language appears in Order 773-A, under item number 54. Here, FERC approves the dispersed power inclusion I4, “...finding it provides useful granularity...”, and that it agreed it is appropriate “to expressly cover dispersed power producing resources utilizing a system designed primarily for aggregating capacity.” We believe that the second sentence should be</p>

further examined for proper intent. Our interpretation of this sentence is that collector systems aggregating dispersed power at a level of 75 MVA or more is the level of intended inclusion. This means that, in the example of a wind farm larger than 75 MVA, the application of the BES definition and all the requisite applicable standards is only at points where the aggregated capacity is greater than 75 MVA. This interpretation has several advantages: it is consistent with the current output threshold value; it does not establish a new, lower threshold for the BES definition; and it applies requirements where appropriate, i.e. equipment that carries 75 MVA and is therefore of sufficient size to be relevant to the reliability of the BES. Aggregator collection systems are designed to employ protection system equipment at the aggregation node, as well as operational output status monitoring equipment, and other equipment important to support grid reliability and monitoring at that aggregation point. Nowhere in the relevant FERC Orders does the language expressly require the inclusion of individual dispersed generators (PV panels, wind turbines, flywheels, microturbines, etc.). We believe that deletion of I4 (a) meets the intent of the FERC direction and properly supports grid reliability. 3. FERC Order 773-A goes on to say in part 60 that, indeed, dispersed power producers with greater than 75 MVA nameplate capacity are already registered. For many registered entities across the country, the interpretation has been to apply the body of NERC standards at the point of aggregation. This regional entity interpretation of NERC standard applicability at the aggregation point is comparable to the interpretation described above, and is based on sound reliability thresholds and knowledge of dispersed power system design. 4. The term "individual resources" utilized in I4 (a) is unclear, and could refer to the wind plant as a whole. What constitutes an "individual resource?" More technically precise language should be utilized to specifically identify what resources are intended to be included per this bullet. 5. In the last two postings, we and other commenters have asked specific technical questions that have not been answered. Instead, we have received only a generic reply that the SDT believes our concerns would best be addressed through clarification of the applicability of individual reliability standards. Please provide specific replies to the following questions: a. In the August 21, 2013 webinar, the BES definition drafting team indicated that its justification for the 75 MVA aggregating threshold in I4 (b) was that 75 MVA is the level that the drafting team believes that single failures resulting in the loss of generation could have an appreciable impact on the grid. It seems inconsistent that a 2 MVA individual dispersed generator is deemed significant to reliability but the equipment that is utilized to connect individual dispersed generators totaling to <75 MVA is deemed not significant to reliability. Please explain the technical rationale for concluding that an individual dispersed generating asset rated at 2 MVA is important to grid reliability but that a collector feeder which may impact up to 37 of these individual dispersed generating assets is not critical to reliability? b. Since the collector feeders are excluded from the BES definition so that there is not a contiguous BES connection between the individual dispersed generating asset and the grid, please explain the technical rationale for concluding that an individual 2 MVA dispersed generator at a facility rated at greater than 75 MVA has more impact on the BES than does an identical 2 MVA dispersed generator at a facility rated at less than 75 MVA? If the impact on grid reliability of both units is the same, why is one considered BES and the other is not? c. In the Consideration of Comments document for the

first draft of the Phase II BES definition, the Drafting Team acknowledged that there are both existing and pending reliability standards which likely will need to be reviewed and revised to clarify or correct the applicability of the standard requirements to dispersed generation. Please identify the reliability gaps being addressed by including individual dispersed generating assets within the BES definition. In other words, what specific existing or pending NERC Reliability Standard Requirements are perceived as being needed to be applied to individual dispersed generating assets to maintain grid reliability? 6. We appreciate that the SDT acknowledges that numerous existing and pending standards will need to be reviewed and revised to clarify standard applicability to individual generating units. However, we do not believe that implementation of the BES definition should go forward until this review and revision of other standards has been completed. Relative to the approval and implementation time frames being discussed for the new BES definition, we do not believe any such action could be taken in a timely enough fashion to resolve industry uncertainty and avoid a major regulatory burden that would distract from efforts that actually improve grid reliability. Without that review, there will simply be too much ambiguity in the requirements as they apply to individual dispersed generating assets and there will be too much compliance effort spent on trying to apply these ambiguous requirements with no commensurate gain in reliability. As currently written, the definition will create much regulatory uncertainty in how auditors will assess an entity's compliance with these ambiguous requirements. Including individual dispersed generators in the BES definition will cause a major diversion away from efforts that improve BES reliability, as entities are forced to simultaneously seek relief via the Exception Process to exclude individual dispersed generators that are insignificant from a reliability standpoint from their programs while at the same time attempting to modify their existing compliance programs to accommodate individual dispersed generators in the event that the exception applications are not approved. With more than 45,000 wind turbines installed in the U.S. and the vast majority of them in wind plants larger than 75 MVA, NERC will be faced with a huge backlog of exception requests for small distributed generators while Generator Owners with dispersed generating assets struggle to implement reliability standards that were never drafted with the intent of being applicable to anything but large scale generating stations. As a result, proceeding with the BES definition as currently drafted would actually impair, rather than improve, bulk electric system reliability. Examples of standards that were not drafted with small dispersed generators in mind include:

- PRC-005-2 Protection System testing – the relay test requirements were developed with large generators in mind, and differ significantly from requirements in FERC Order 661A, of 2005 that require wind plants to meet Low Voltage Ride-Through (LVRT) and Power Factor Design Criteria. These standards significantly change the protection scheme applied to individual turbines, and there is no clarity about how they should be applied. Wind turbine protection systems are often integral to the wind farm control system and the PRC-005-2 requirements were developed for protection equipment typically applied to large-scale generation, not wind farm control systems.
- TOP-002 Normal Operations Planning – Under R14 of this standard, an unplanned outage for any individual wind turbine would require a status notification report from the GO to the TO/TOP. While such a report can be important for large central station generation, it would provide no value for a small individual wind turbine

generator. This level of reporting, at typically less than 3 MVA, is much lower than any practical reliability threshold, and would simply result in a documentation effort with no value. Similar concerns exist for FAC-008-3, PRC-001-1, PRC-004-2a, PRC-019-1, PRC-024-1, and PRC-025-1, and other standards in which small-scale dispersed generators were not considered during the standards' development. Unless Inclusion I4 (a) is eliminated, or significantly revised to clarify that the only BES-relevant standards that apply to dispersed generators are those that affirmatively state that they apply to dispersed generators, we do not believe implementation of the new BES definition should go forward until all reliability standards have been reviewed and revised as necessary to clarify the applicability to individual dispersed generating assets. What reliability benefit is there to a "bright line" BES definition if there is not a corresponding clarity in the applicability of reliability standards to the elements deemed to be included in the BES? 7. If the standards drafting team does not delete I4 (a) as requested above, we ask that I4 (a) be modified to clarify that the only BES-relevant standards that apply to individual dispersed generators are those that affirmatively state that they apply to dispersed generators. This will help avoid the harmful consequences of attempting to apply standards that were not written with dispersed generators in mind to dispersed generators.

Group

DTE Electric

Kathleen Black

No

There is already technical justification to exclude units less than 20MVA, therefore, it is logical to assume that units smaller than 20 MVA should be excluded. Certainly any collector system aggregating to less than 20 MVA should also be excluded. The technical justification to exclude aggregation of less than 75 MVA is the same justification that needs to be applied to these wind and solar sites. The risk of all the units failing at the same time is very low, unless it is a common element failure (collector network, control system or transformer). Therefore, no individual units should be included until they aggregate to 75 MVA. If there is a control system that can impact 75 MVA, then it is included, but not each generator. 75 MVA transformers and relaying would be included etc. Even when considering common mode failure of individual units, it is a very low probability that units would fail at the same time.

No Comment

Group

Associated Electric Cooperative, Inc. - JRO00088

David Dockery

No

The SDT failed to provide technical rationale for their imposing an I4.b sub-aggregate MVA threshold rather than the point aggregating total capacity within these resources' collector-circuits, thereby imposing additional compliance burdens upon those asset owners. Fortunately, a review of the SDT's recorded deliberations will confirm that they recanted their earlier draft-2 reliability-based rationale for having done so. AECI acknowledges that, to

some, I4.b might appear more closely aligned with Phase 2's I2.b BES Scope. However AECI also believes that the I4.b "from the terminals" debate revealed that I2.b would have been better technically justifiable at the point of total aggregated plant-capacity as well, a substantive I2.b refinement seemingly outside the scope of this Phase 2 SAR. Yet duplicating a I2.b technical flaw, under I4.b, technically can neither serve to correct the I2.b flaw nor justify I4.b.

No

Individual

Spencer Tacke

Modesto Irrigation District

No

Yes

I voted No because I disagree with the criteria proposed for defining the BES. The BES criteria should be the criteria developed by the WECC BES Definition Task Force in the 2009-2010 time frame, which is based on extensive engineering studies. These extensive studies showed that system elements with a material impact to the regional interconnected system (i.e., BES elements), are those elements at which the available short circuit MVA exceeds 6,000 MVA. This is a very simple criteria based on sound engineering studies, and quite unlike the current proposed definition of the BES that we are voting on today. Thank you.

Group

PacifiCorp

Ryan Millard

No

PacifiCorp continues to believe that individual dispersed generating units should be excluded from Inclusion I4 of the revised BES definition. PacifiCorp does not agree with the SDT's characterization in the question that no technical rationale was offered by any stakeholder to support removal of the individual units from Inclusion I4. It is PacifiCorp's understanding that at least several commenting entities have provided sound technical arguments to support the exclusion of individual dispersed generating units. While it may be the case that the SDT does not believe the technical justifications offered by entities have been compelling, the SDT has not provided a complete analysis to the industry refuting each of the technical arguments provided by registered entities. After all, a primary objective of Phase II of the BES definition project was to carefully consider additional technical arguments that would further refine the revised definition, including with regard to individual dispersed generating units. PacifiCorp agrees with the SDT that one suitable solution to address the inclusion of individual dispersed generating facilities may be via adjustments to individual standards' applicability sections. In order to accomplish the recommended case-by-case review, however, a Standard Authorization Request would likely need to be prepared to commence the NERC standards development process for each potentially impacted standard. In that case, it is more appropriate and efficient to exclude such facilities from Inclusion I4 and then initiate changes to a limited number of impacted standards that should actually apply to individual dispersed

generators, rather than initiate individual projects to modify a larger pool of standards for which the application to such generators is not appropriate to promote reliability.

No

Individual

Russel Mountjoy

Midwest Reliability Organization

No

In the MRO opinion, the BES definition should not have included individual resources of a dispersed power producing resource. Instead, the Regions could have opted to include any that had a material impact to reliability – just the opposite of the way the BES definition was written. NERC talks of a guidance document in order to define those resources which are a part of the BES. This does not bear much weight when put towards a FERC approved definition and FERC approved Reliability Standards. The notion to use the BES implementation period of two years to work with the Standards Committee in order to revise the standards identified as requiring revisions doesn't seem workable. The implementation period is the time that has been identified for Registered Entities to bring their programs into compliance, it is not reasonable to expect the entities to expend their resources to bring their programs up to date with the possibility of the standards not being applicable. Nor is it reasonable to expect entities to postpone implementing programs in anticipation of standards being revised prior to the end of the implementation period.

No

Individual

Ryan Walter

Tri-State Generation and Transmission Association, Inc.

No

Tri-State disagrees that FERC Orders 773 and 773-A approved the inclusion of individual dispersed generating units that are individually, or in aggregate, below the capacity that requires the owner to register as a Generator Owner. Inclusion I4 of the current draft of the BES definition does require that under various scenarios. It is apparent from the comments to draft 2 of the Definition, and the questions during the webinar that was held by the drafting team, that Inclusion I4a) is disputed by a large percentage of registered entities and there is no technical basis for its inclusion in the definition. When asked during the webinar whether the drafting team had approached FERC regarding whether all individual dispersed units were to be included and about the fact that there was no technical justification for such inclusion, the drafting team simply stated that the FERC staff do not speak for the Commission. While it is true that the staff do not speak for the Commission, all the drafting teams have FERC staff available that are able to convey the thoughts of the drafting teams and industry to the Commission. Tri-State agrees that the collection system for dispersed generation that aggregates to 75 MVA or more is important to include in the definition, since a single contingency could lead to loss of a large magnitude of generation. But loss of an individual small generator, oftentimes 2 MVA or less, has no direct consequence to the reliability of the

BES.
No
Group
Bonneville Power Administration
Jamison Dye
Yes
No
Individual
Mary Lou Ideus
EDP Renewables North America LLC
AWEA
No
EDP Renewables North America LLC (EDPR NA) disagrees with the inclusion of individual dispersed power producing units (individual wind turbines and solar units (inverters)) in the definition of I4. Individual wind turbines have negligible or no effect on the reliability of the BES due to their generating capacity and the fact that they are intermittent resources. Inclusion of individual wind turbines would require a wind generator to consider each wind turbine in its compliance program for Standards such as PRC-005. Since there is no discrete equipment, outside of the turbine control system, in a wind turbine that could logically be included in a wind generator's Protection System devices to be tested and maintained, the wind generator would be forced to seek exclusion under the Applicability section of other affected Standards. This would impose an administrative burden not only on the wind generation companies but also on each of the NERC Regional Entities, and indeed NERC itself, to consider each of the affected Registered Entity's request for exclusion from Applicability with certain of the currently enforceable Standards. In addition, inclusion of individual wind turbines in I4 would require revisions to each of the applicable Reliability Standards, a lengthy process. Compliance with many standards including the following would be required for such low level BES elements: FAC-003, PRC-001, PRC-004, PRC-005, and VAR-002. The SDT is asking for technical reasons for disagreement with the language; however, EDPR NA believes that the SDT has not provided sound technical reasons for inclusion of individual dispersed power producing units in I4. Suggested language change: I4: The point at which the aggregation equals to a capacity threshold of 75 MVA or above.

Additional comments received from PSEG (voting entities are in NPCC and RFC, and are in these segments: 1, 3, 5, & 6):

1. The SDT has re-structured the language of Inclusion I4 to more clearly reflect the SDT's intent to include individual dispersed power producing units (such as wind and solar units) that aggregate to greater than 75 MVA , along with the collector system that connects these units, from the point they aggregate to greater than 75 MVA to the point of connection at

100kV or higher. While the SDT recognizes that some stakeholders do not agree with the inclusion of individual dispersed power producing units, FERC Orders 773 and 773-A approved the inclusion of these individual units. No stakeholder has provided a technical rationale to support removal of the individual units from the definition. The SDT believes that stakeholder concerns about inclusion of individual units may be addressed by specifying the Facilities to which an individual standard applies within the Applicability section of that standard.

With this background, can you support the proposed clarifications to I4? If not, please provide technical rationale for your disagreement along with suggested language changes.

Yes:

No: X

Comments: As we stated in our comments to the prior posting, we believe exclusion of “collector systems” for dispersed I4 generators, which includes their GSU, from the BES while similar collector systems are included in the BES for I2 generators creates an unlevel competitive environment between I2 and I4 generators. Dispersed generators are a significant and growing part of generation resources and they compete with traditional generation. Other than the fact that FERC allowed the collector system exclusion, the drafting team has offered no reliability rationale for excluding the collector systems of dispersed generators while including them for I2 generators. [In Order 773, although FERC (P 113 and P 114) stated that radial collector systems used solely to aggregate generation SHOULD be part of the BES since multiple transformers connections did not exempt I2 generators; however, they did not direct NERC to include the collector system in I4 generators in the BES.]

Because of the disparate treatment of collector systems, we believe that the drafting team’s BES definition violates Section 303 – Relationship between Reliability Standards and Competition – in the NERC Rules of Procedure under Paragraph 1. Paragraph 1 in Section 303 states: “Competition — A Reliability Standard shall not give any market participant an unfair competitive advantage.” Furthermore, the exclusion of the collector system for I4 generators is the only incident of a non-contiguous BES in the BES definition. The collector systems are solely used by I4 generators to aggregate generation; they have no local distribution application and therefore do not come under the local distribution exemption in the core BES definition (i.e., the BES definition “does not include facilities used in the local distribution of electric energy”).