Individual or group. (65 Responses)
Name (45 Responses)
Organization (45 Responses)
Group Name (20 Responses)
Lead Contact (20 Responses)
IF YOU WISH TO EXPRESS SUPPORT FOR ANOTHER ENTITY'S COMMENTS WITHOUT ENTERING ANY ADDITIONAL COMMENTS, YOU MAY DO SO HERE. (5 Responses)
Comments (65 Responses)
Question 1 (57 Responses)
Question 1 Comments (60 Responses)
Question 2 (48 Responses)
Question 2 Comments (60 Responses)
Question 3 (47 Responses)
Question 3 Comments (60 Responses)
Question 4 (49 Responses)
Question 4 Comments (60 Responses)

Group
Northeast Power Coordinating Council
Guy Zito
Yes
Yes
Yes
Yes
Suggest the following rewording of the Effective Dates section of the Implementation Plan to add clarity regarding approvals: In those jurisdictions where no regulatory approval is required the definition shall become effective on the first day of the second calendar quarter after Board of Trustees adoption, or as otherwise made effective pursuant to the laws of applicable governmental authorities. In those jurisdictions where no regulatory approval is required the definition shall (go should be deleted) become effective on the first day of the second calendar quarter after Board of Trustees adoption. NPCC participating members suggest that when addressing the requirements pertaining to load reliability and continuity in a standard, they must include that for a non-U.S. Registered Entity it should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-U.S. jurisdiction.
Individual

Thomas Breene
Wisconsin Public Service Corporation
No
We agree with including the Generating stations with dispersed generation from the point of aggregation to 75 MVA as I4-b does. We 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 disagree with including the individual resources themselves since, as indicated on the webinar, they are not significant to the reliability of the BES . Including dispersed power producing resources less than 25MVA ignores differences in engineering design and operating philosophies. For our company each 2MVA wind turbine is designed to sync on and off the grid several times a day. For this reason, the engineering design incorporates a large contactor to handle these operations. This contactor is controlled by the turbine PLC which contains the main protective relay functions (i.e. frequency, over/under voltage, imbalance…etc) traditionally contained in discrete protective relays. A generator breaker is designed in series with the contactor, which includes a self contained overcurrent element that serves as a backup function, but is different in traditional design in that each Protection Component is contained in the breaker device. Due to the PLC control/protection integration, equipment differences, and operating philosophies implementation of NERC Reliability Standards such as PRC-004, PRC-005 and FAC-008 would be impractical and onerous lending little to no reliability improvement. We suggest eliminating I4a completely since, as indicated on the webinar I4b encompasses the portion of the dispersed power generating plant that is significant to the reliability of the BES
Yes
We agree with the 50kv limit since the SDT has posted a reasonable technical rationale.
Yes
No
Individual
Joseph DePoorter
Madison Gas and Electric Company
No
MG&E is voting against the BES Phase II definition due to the fact that it contains Inclusion (I)4a; Individual resources that aggregate to a total capacity greater than 75 MVA (gross nameplate rating). MG&E recommends that I4a be removed and I4b be maintained as the point of aggregation is what is modeled and makes the most sense. Recommend I4 to read as: “Dispersed power producing resources consisting of the system designed primarily for delivering capacity 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”. Please see the following

reasons for our negative vote: 1. An individual 1.5 mW wind turbine does not impact the BES when it reduces its output (remember just because a turbine is rated at 1.5mW doesn't mean it automatically reaches that output when the wind blows) or trips offline. Entities have been making comments that the place where power is aggregated (usually the bus) should be included and not individual wind turbines, solar collectors, manure digesters, etc (as shown in the comment form). The amount of compliance time for PRC-004 would never be completed. Wind turbines have up to 250 plus reasons why they can trip. Usually due to the change in wind direction. If the wind changes direction and the turbine head cannot keep up within a certain degree of angle, the unit will trip. Coming back on line when the angle requirements are met. So, Entity's will need to apply the R2 of PRC-004-2a, for every wind turbine trip. We do not have the resources to review these trips and that 1.5 wind turbine does not impact the BES. We will agree that the point of interconnection (of greater than 75 MVA) is important and should be contained in the BES definition as written in I4B. PRC-004-2a is only one Standard, notwithstanding; BAL-001-TRE-01, 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. A 75 MVA wind farm is not equal to a 75 MVA combustion turbine. Yes, energy flow is modeled the same (at full name plate output) but these two extremely different facilities are quite different. The wind facility is not dispatchable (only reduction in Mw output can take place when there is an output) and wind facilities usually are set at a constant power factor and do not adjust for frequency deviations. 2. The SDT has recommended that a SAR be submitted in order to refine the Standards that would be applicable to individual power producing resources contained under I4 of the phase II definition. This response is not acceptable. The SDT should not passively answer an entity's question by stating that a different process "may" fix the issue at hand. Recommend I4a be deleted and I4b be maintained as I4a. During the 8/21/2013 webinar the presenter emphasized the critical nature of the aggregate generation of dispersed power producing resources to the reliability of the interconnected transmission system. I4 subpart (a) is inconsistent with the stated critical nature of the aggregate generation. The presenter also indicated that standards that apply to GO/GOP associated standards should be addressed via a SAR to correct reliability standards that impose a burden on the industry without providing a significant benefit to reliability. The appropriate manner to address this discrepancy is not to submit a SAR to modify the standards that would inappropriately invoke requirements on individual generators due to their inclusion in the BES definition, but to eliminate I4 subpart (a) and modify standards in the future to address any reliability issues that may need the imposition of requirements for individual dispersed power producing resources. Please Note that FAC-001 and FAC-002 have established processes for generators (of all shapes and sizes) to interconnect to the BES. 3. I4a should be deleted in its entirety. The SDT is forcing every dispersed power Facility over 75 MVA to be in the definition, where the SDT should be keeping individual resources out and allow other Standards and SDTs to determine if that should be included within each individual Standard. The BES definition should be written to give broad details and each individual Standard should be where details are maintained. This is already the case for the following Standards; MOD-025-1, R1 and VAR-001-2, R3 are two examples where the Standard dictates what is applicable and what is not. 4. We do not

believe that since FERC has approved Phase I that the SDT is bound by that approval as being unchangeable. The Commission has only approved a part of the process and nowhere is it stated that once Phase I is approved that it cannot be changed. This is proof with the other changes that the SDT has made in Phase II compared to Phase I. 5. NERC or the SDT have not provided the industry with event analysis or lessons learned information that an individual dispersed power producing resource (not whole facilities) within a Facility has led to instability of the BES. 6. The inclusion of I4a does not alien itself with the current NERC and Regional RAI process. NERC's CEO and President has said that everything cannot be a priority. The amount of records management will only benefit a company who sells their services in managing individual power producing resources (i.e. paper work). The Registered entity and their Region will not see the benefit of tracking several thousand wind turbines and solar panels, for what? The "what" is unknown because the SDT is taking words of the "Statement of Compliance Registry Criteria" and applying it to our standards development process. Currently Entities do not register per Facility, but this definition does force entities to register per Facility. The SDT is mixing apples and oranges. 7. The BES SDT has stated that the collector system is not included within the definition. But, FAC-008-3, is written to support the reliability of the BES and Requirement 2 states that each Generator Owner shall have a documented methodology between the generator (R1) to the point of interconnection. This means that the collector system is part of the BES definition. Please clarify how one standard pulls in the collector system and the proposed definition keeps it out? 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..
Yes
Yes
Yes
The inclusion of I4a does not support the reliabile operation of the BES. As stated before, we agree that the point of interconnection should be included, not the individual intermitent resources.
Group
Oklahoma Municipal Power Authority
Ashley Stringer
Agree
Transmission Access Policy Study (TAPS) Group
Group
Southwest Power Pool Regional Entity
Emily Pennel
No

Separation of I2, no issue No: 75MVA threshold may be higher than what FERC will support. Comments: Paragraph 167 of Order 773 implies that FERC sees the aggregation point for tie lines at 20MVA. However, there was some flexibility provided in the rehearing comments on this point. Paragraph 113 of Order 773 states that multiple step-up transformers (in particular 34.5/115kV) are expected to be included by FERC.
Yes
The technical justification document supports this conclusion.
Yes
Group
Arizona Public Service Company
Janet Smith, Regulatory Affairs Supervisor
Yes
This change returns it to the original language in Phase I. Either way it still has the same intent.
No
Note two was added in draft 1 to Phase II. This change to Note 2 changes it from 30KV to 50KV, due to analysis they performed. 50KV threshold is less restrictive than 30KV. FERC forced Note 2 – this note requires determining loops between radial lines, and including radials with >50 KV loops
Yes
This is in regard to local networks and this change is less restrictive.
Yes
Inclusion I5 is about reactive sources. However it only excludes E4. There is no reason why all exclusions E1 to E4 should not apply to reactive sources. The current definition will include reactive sources in radial system as part of BES. There is no technical reason for excluding radial system and yet including reactive sources in radial system as part of BES
Individual
David Thorne
Pepco Holdings Inc
Yes
Yes
Yes

No
Individual
Scott Bos
Muscatine Power and Water
No
MP&W appreciates the changes SDT made to I4. However, we think that the wording of I4a still does not adequately communication that desired treatment of small dispersed power producing resources as an aggregate, rather than on an individual basis, when the aggregate capacity is 75 MVA or more. To address this issue, we suggest the following wording change to I4a, “Aggregation point of dispersed resources when they aggregate to a total capacity of greater than 75 MVA (gross nameplate rating, and” An individual 1.5 MW wind turbine does not impact the BES when it reduces its output (remember just because a turbine is rated at 1.5 MW doesn't mean it automatically reaches that output when the wind blows) or trips offline. Entities have been making comments that the place where power is aggregated (usually the bus) should be included and not individual the wind turbines, solar collectors, manure digesters, etc. The amount of compliance time for PRC-004 would never be enough. Wind turbines have up to 250 plus reasons why they can trip. Usually due to the change in wind direction. If the wind changes direction and the turbine head can not keep up within a certain degree of angle, the unit will trip. Coming back on line when the angle requirement is met. So, Entity's will need to apply the R2 of PRC-004-2a, for every wind turbine trip. Not all Entities have the resources to review these trips and that 1.5 MW wind turbine does not impact the BES. MP&W beleives that the point of interconnection (of greater than 75 MVA) is important and should be contained in the BES definition as written in I4B. PRC-004-2a is only one Standard, notwithstanding; BAL-001-TRE-01, FAC-001, FAC-003, MOD-024, MOD-025, MOD-026, MOD-027, PRC-005, PRC-006-SPP-01, PRC-019, PRC-024, PRC-025, and TOP-003.
Yes
Yes
Yes
The SDT has recommended that a SAR be submitted in order to refine the Standards that would be applicable to individual power producing resources contained under I4 of the phase II definition. This response is not acceptable. The SDT should not passively answer an entity's question by stating that a different process "may" fix the issue at hand. MP&W recommends I4a be deleted and I4b be maintained as I4a. I4a should be deleted in its entirety. The SDT is forcing every dispersed power Facility over 75 MVA to be in the definition, where the SDT should be keeping individual resources out and allow other Standards and SDTs to determine if that should be included within each individual Standard. The BES definition should be written to give broad details and each individual Standard should be where the details are

maintained. This is already the case for the following Standards; MOD-025-1, R1 and VAR-001-2, R3 are two examples where the Standard dictates what is applicable and what is not. MP&W does not believe that since FERC has approved Phase I that the SDT is bound by that approval as being unchangeable. The Commission has only approved a part of the process and no where is it stated that once Phase I is approved that it can not be changed. This is proof with the other changes that the SDT has made in Phase II compared to Phase I. NERC or the SDT have not provided the industry with event analysis or lessons learned information that an individual dispersed power producing resource within a Facility has led to instability or cascading events on the BES. The inclusion of I4a does not align itself with the current NERC and Regional RAI process. NERC's CEO and President has even said that everything cannot be a priority. The amount of records management will only benefit a consultant who sells their services in managing individual power producing resources (i.e. paper work). The Registered Entity and their Region will not see the benefit of tracking several thousand wind turbines and solar panels, for what? The "what" is unknown because the SDT is taking words of the "Statement of Compliance Registry Criteria" and applying it to our standards development process. Currently Entities do not register per Facility, but this definition does force entities to register per Facility. The SDT is mixing apples and oranges.
Individual
John Seelke
Public Service Enterprise Group
No
The proposed elimination of the “collector system” as part of the BES makes the BES non-contiguous. In Order 773, the Commission (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, FERC did not direct NERC to include the collector system in the BES. However, it did require that radial lines that connect I2 generators (call “tie lines” in Order 773) should be part of the BES (P 164-P 167) for reasons of contiguity. This BES definition proposed in Phase 2 creates an unlevel competitive environment between I4 generators and I2 generators. Moreover, in its SAR for Phase 2, the question of BES contiguity was supposed to be addressed. The team’s response on this issue allows dispersed power generators to be non-contiguous from the point where ac power is produced to where it is injected into the grid. The connections of I2 BES generators are, however, ARE included in the BES. In the diagram shown in the comment form, if the dispersed generators were forty 2 MVA diesel generators connected as shown, would their collector system be excluded from the BES also? What is there were eight 10 MVA gas turbines connected via a collector system? How about six 16 MVA gas turbines? As a member of the RBB, we direct that the team include collector systems that are solely used to aggregate generation in the BES definition.
Yes
Yes

No
Individual
Scott Berry
Indiana Municipal Power Agency
No
For question 1, Indiana Municipal Power Agency agrees with the comments submitted by Frank Gaffney, Floriday Municipal Power Agency.
Yes
IMPA appreciates the work that the SDT has done to come up with an alternative to the Commission's sub-100kV loop concerns for radial systems. IMPA supports the SDT's white paper and the proposed 50kV threshold value.
Yes
No
Individual
Barbara Kedrowski
Wisconsin Electric Power Company
No
Wisconsin Electric appreciates the work the Standard Drafting Team (SDT) has accomplished, but is concerned that the team has not corrected a fatal flaw in the definition of the Bulk Electric System. During the 8/21 webinar, the SDT said that they don't have the power to change an existing approved definition with regard to the inclusion of individual distributed generation resources, yet that's what they in fact do every time they draft a standard revision. FERC accepted the Phase 1 definition, but we believe the SDT had the opportunity to correct the flawed definition. The SDT team did not address industry's comments that individual wind turbines (and other dispersed generating units) should not be included in the definition. The SDT stated that industry has the option to address whether dispersed generation should be applicable to a standard by revising the applicability of those standards. This method of correcting for the wrong elements' inclusion in the definition will take time and resources from the industry. During this time period, the industry would still need to assume responsibility for compliance to each affected standard because it would be unknown when/if the revisions would be accepted and approved. For instance, compliance to Reliability Standard PRC-005 requires the industry to include thousands of individual wind turbines (and small solar panels) in the maintenance and testing of relays and associated equipment. Resources required to complete this testing are specialized and significant, with

little to no measureable benefit to the BES (and an indirect detriment by taking those resources away from other tasks that are beneficial). In regards to CIP Version 5 requirements, if each wind turbine is part of the BES, then each wind turbine's monitoring and control systems will be "BES Cyber Systems". Again, resources will be required for compliance with no benefit to reliability. Individual dispersed generation units (generally less than 2 MW) do not impact the reliability of the Bulk Electric System. The SDT points out that it is not including collector circuits of dispersed generators because collector circuits do not have a true reliability impact, but the SDT fails to recognize that the individual dispersed generators have even less of an impact. The issue of concern is a single point of failure affecting 75 MWs of generation, not the failure of an individual wind turbine. By excluding the collector systems, but including the individual generators, the SDT team is not following FERC's Order 773 (issued 12/20/2012) Paragraph 165, in which the Commission stated that it is appropriate to have the bulk electric system contiguous, without facilities or elements "stranded" or "cut-off" from the remainder of the bulk electric system. The individual dispersed generating units are stranded from the remainder of the bulk electric system in the current draft of the definition. The SDT stated during the 8/21 webinar, that industry can use the exception process to exclude wind turbines, or other dispersed generators. This viewpoint has a fundamental problem. It mandates that individual generators be included in a faulty definition that pulls in insignificant elements into the BES and then requires industry to exclude them (essentially an entire asset type). That requires hundreds of dispersed generator owners to rely on the regulator to be reasonable and allow us to exclude all of our individual dispersed generators. The proposed Phase 2 definition poses a huge compliance and regulatory burden that doesn't add to the reliability of the BES.
Individual
John Bee
Exelon and its' affiliates
Yes
Yes
Yes
Yes
Suggest adding the following to E4: or for the sole purpose of regulating internal generating station auxiliary buses. So that it reads: E4 – Reactive Power devices installed for the sole benefit of a retail customer(s) or for the sole purpose of regulating internal generating station auxiliary buses.

Individual
Bob Thomas
Illinois Municipal Electric Agency
Agree
Transmission Access Policy Study Group (TAPS) and SERC OC Review Group
Group
Salt River Project
Bob Steiger
Yes
Yes
Yes
No
Individual
Gary Kruempel, Terry Harbour, Tom Mielnik
MidAmerican Energy Company
No
The SDT has made significant progress by separating dispersed power producing resources from traditional generating resources. By including I4 subpart (b) the SDT has identified the critical element(s) that impact reliability. However, by failing to address the issue of reliability standards as they apply to individual dispersed power resources, the SDT has perpetuated a gross error implemented in phase one of the BES, by including each individual dispersed resource as BES. During the 8/21/2013 webinar the presenter emphasized the critical nature of the aggregate generation of dispersed power producing resources to the reliability of the interconnected transmission system. I4 subpart (a) is inconsistent with the stated critical nature of the aggregate generation. The presenter also indicated that standards that apply to GO/GOP associated standards should be addressed via a SAR to correct reliability standards that impose a burden on the industry without providing a significant benefit to reliability. The appropriate manner to address this discrepancy is not to submit a SAR to modify the standards that would inappropriately invoke requirements on individual generators due to their inclusion in the BES definition, but to eliminate I4 subpart (a) and modify standards in the future to address any reliability issues that may be required of individual dispersed power producing resource. The following language is recommended for I4: Dispersed Power Producing Resources: Where dispersed power producing resources aggregate to greater than 75 MVA the to a common point of connection at a voltage of 100 kV or above. Note:

Individual dispersed power producing resources are not BES, but does not exempt registration as a GO or GOP. 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. Examples could include but are not limited to solar, geothermal, energy storage, flywheels, wind, micro-turbines, and fuel cells. Justification: A dispersed power generating facility necessarily consists of individual units of a limited size to take advantage of the distributed nature of the resource (e.g., wind or solar) upon which the facility relies for its fuel source. One benefit of such facilities' unit size and geographical distribution is that they are not as susceptible to a substantial loss of generating capability as a single unit of 20 MVA or greater (the registration threshold for a single generating unit). If the arrayed generators were each 2 MVA then the probability of losing 20 MVA at the generator level would be .00000001%. If the units were 5 MVA each the probability of losing all four units at the generator level would be .01%. The probability of losing a single 20 MVA unit would be 10%. These variations illustrate that there will be different values depending upon the arrayed generator's size. Given the reliability advantage this diversity affords it does not seem reasonable to treat this type of facility in the same way as a single unit facility of 20 MVA or greater. As recognized by the SDT and FERC in Order No. 773, a dispersed generating facility of 75 MVA or greater (NERC Registry Criterion Section III.c.2) can have an impact on the BES. To recognize this impact and to also account for the dispersed nature and reliability advantage as described above, it is requested that the individual power producing resources be excluded from the BES. A technical example of the impact of the loss of an individual wind turbine to the BES is available to the SDT upon request.
Yes
Yes
No
Individual
Shaun Moran, Lynn Schmidt, Joe O'Brien, Ed Mackowicz,
NIPSCO
No
We requested some clarification regarding a wind farm within NIPSCO from members of the SDT, and promptly received feedback. The main concern is that we are not sure of the intent of inclusion I4 because it is attempting to include a bus within an intermediate voltage. In our case it is 69 kV that may or may not be included since there are 2 transformations within the path to the 138KV; 1 up to 69 kV and 2 parallel transformers up to the 138 kV. In addition the entire 69 kV path is not "designed primarily for delivering" this wind power to the 138 kV system; the 69 kV system includes many lines serving various demand. Some on the SDT felt

that the single step-up transformer is the same as 2 transformers in parallel, while others did not. Following this discussion we failed to receive a uniform clarification. Some opinions were that the 69 kV system would be included in the BES while others believed it would not; we have similar differing interpretations within NIPSCO. Further clarification needs to be made on whether or not multiple transformations are or are not included.
Yes
We'd rather see it at 70 kV, however we appreciate the analysis that was performed justifying the 50 kV.
Yes
good
Yes
Another major concern is whether our 138 kV industrial customers with multiple feeds are part of the BES. One of the criteria is whether power ever flows through the customer's system. This could be very difficult to prove with evidence. Perhaps during the last year's peak load or maximum transfer across the host TOP's system, the flow could be integrated over an hour; if there is system flow across the customer's system during the integrated hour, then the customer's system should be considered part of the BES and the customer should have multiple years to comply with becoming part of the BES. If the customer becomes part of the BES would this mean that they would have to become a TO/TOP? Would it require that they have NERC certified operators? We see these as emerging concerns. Additionally, it appears that several small wind generators may become part of the BES which would bring PRC-004 misoperations into play for them. It is our understanding that such generators trip off line based on wind and wind direction. Keeping track of these operations and the associated analysis may become quite an undertaking. Other standards such as PRC-005 may also become a concern.
Individual
Michael Falvo
Independent Electricity System Operator
Yes
Yes
We suggest that NERC and the SDT consider revising Note 2 to read as follows: Note 2 – The presence of a contiguous loop, operated at a voltage level of 50 kV or less, between configurations being considered as radial systems, does not affect this exclusion. Non-US Registered Entities can adopt the same voltage level or should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency.
Yes
No

Individual
David Jendras
Ameren
Yes
No
In our opinion, the SDT has improved the E1 exclusion criteria by increasing the 30 kV threshold to 50 kV. However, we still believe that the threshold is too low and request that it be raised to at least 70 kV. As the definition now stands, we will have to perform what we feel is unnecessary analysis to prove that most of our local subtransmission networks should also be excluded.
Yes
We agree with the addition of the word “Real”, but we have other concerns with E3b and we have identified in the comments to question 4 below.
Yes
1. We request the SDT to provide clarification for E3b testing conditions, specifically for all facilities in service or for single transmission contingency conditions. We believe that the criteria needs to be very clear so it is not confusing for entities when determining inclusion of local network facilities as BES facilities. 2. Also, we do not believe that 1 MW of back-feed from local network facilities to transmission facilities for a few hours out of the year constitutes classification of the local network facilities as BES facilities. We request that the SDT consider for inclusion that the magnitude of the injections from the local network should be in line with other injections into the transmission system such as: (a) Generators with a nameplate greater than 20 MVA, or (b) Aggregate resources greater than 75 MVA. 3. In our opinion, the standard puts additional burden on local network owners including local subtransmission network owners to prove that their facilities should be excluded from consideration as BES facilities. (a) We believe that, testing for BES inclusion could be included in the annual TPL contingency analysis, but it may not be possible to complete this type of analysis before the end of the year unless the criteria is clearly defined and limited in scope, otherwise numerous models reflecting varying system conditions would need to be considered. (b) We ask the SDT to recall that it was suggested in the last webinar that SCADA data could be used to prove that there was no back-feed from the local network to the transmission system. (c) We realize that the accuracy of SCADA data at low flow levels can be suspect at low load flows but if considered with the type of relaying, that is if the relaying limits power flow back into the BES transmission system, this could be used as a means of quick determination for inclusion. We appreciate the work of the SDT effort to provide a reasonable and balanced approach to the determination of BES facilities, and doing all of this within a very short period of time. Again we ask the SDT for consideration with respect of the 50kV threshold being raised to 70kV, and that with respect to injections into the transmission

network from the various generation and local network sources that they be considered as a comparable basis in the determination of BES facilities.
Individual
Chifong Thomas
BrightSource Energy, Inc.
No
No. We agree with the separation of I2 and I4 and this does provide clarity by creating a distinction between more traditional generation and distributed generation resources. We disagree with I4 to be applied only when both (A) and (B) are true. We recognize that each single small generator or even a group of these small generators cannot impact the BES and therefore, we would support the including only of the individual generating resources (A) (i.e., greater than 75 MVA) in the definition. The inclusion of the aggregate point (B) below 100 kV will improve reliability by focusing on the area that can cause the loss of 75MVA of distributed generation resources. We recognize that there will be complication in determining the aggregate point and to the implementation of standards associated with this portion of the collector system. For example, the various standards that are associated with the BES definition will also need to apply to this portion of the collector system and associated low voltage equipment.
Yes
Yes
Individual
Amber Anderson
East Kentucky Power Cooperative
No
In the consideration of comments, the drafting team indicated that a SAR might be submitted to appropriately adjust GO and GOP standards requirements for dispersed generating facilities. We agree that is the approach to undertake. In order to support this approach, I4 should be deleted to avoid the situation where inappropriate provisions could become effective and compliance become difficult or impossible for entities until work is completed through the SAR to adjust those requirements. In the filing with FERC this procedure could be explained so that FERC can be assured that their approval of inclusion of dispersed generating facilities in the Phase I order will be appropriately implemented.

Group
Dominion
Louis Slade
Yes
Yes
Yes
No
Individual
Thomas Foltz
American Electric Power
No
AEP does not agree with the premise that BES elements (measured for compliance) should be as granular as the individual dispersed power resource. 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. 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. We believe it would be beneficial and provide more clarity if the verbiage “aggregate to a total capacity greater than 75 MVA (gross nameplate rating) at a common point of connection to a voltage of 100 kV or above” were moved to the beginning of the I4 paragraph rather than as a sub-bullet. For example, “Dispersed power producing resources that aggregate to a total capacity greater than 75 MVA….”. We appreciated the development of the diagram to explain the scenario. We encourage the team to continue to provide these illustrations to clarify the intent and the application.
No
The thought process of the note #2 is confusing the process. One could take this to mean that a 69 kV system would be included by exclusion. AEP does not believe this to be the case, but the wording of this note does not lead to an obvious conclusion. We suggest that the SDT make another attempt to provide a simpler and clearer approach. AEP also suggests that E1 have transmission removed from between the words contiguous and Elements. We recommend that it instead say “Radial systems: A group of contiguous Elements that emanates from a single point of connection of 100 kV or higher and:”
Yes

Yes
To reiterate, AEP does not agree with the premise that BES elements (measured for compliance) should be as granular as the individual dispersed power resource. 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. 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. We appreciated the development of the diagram to explain the scenario. We encourage the team to continue to provide these illustrations to clarify the intent and the application. When the guidance documents were produced last year, we had a better understanding of how the pieces of the definition fit together (and where there were significant gaps). We encourage the SDT to develop the scenarios and the diagrams first for industry review then the definition should be crafted to meet those. We understand the pressure to meet the FERC deadlines, but continuing to tweak this foundation little by little had proved to be a difficult task and an overhaul of the approach might yield better results. If this requires modifying the SAR to provide the SDT with the flexibility to address broader concerns, AEP endorses this approach.
Individual
William Waudby
Consumers Energy Company
No
The proposed wording of I4(b) is acceptable in that includes "…from the point where resources aggregate to greater than 75 MVA…". Consumers Energy objects to I4(a) which includes all "individual resources that aggregate to a total ampacity greater than 75 MVA". This could be interpreted to include each of the small generators, each 690V to 34.5kV transformer and the collector systems on a wind farm. I4(a) should be removed from the BES definition leaving only I4(b) as an inclusion. Consumers Energy recommends a negative ballot until the wind farm generators, transformers and collector systems are excluded.
Yes
Yes
No
Individual
Kenneth A Goldsmith
Alliant Energy

No
Alliant Energy agrees with the changes to I2 and I4b, however, firmly believe I4a must be deleted. There is no way an individual dispersed generator in the range of <1 MW to 5 MW will have any reliability impact on the reliability of the BES. In addition, in the MRO footprint alone there would be ~7500 generators added to the list of BES equipment, which would be extremely costly to manage from both the Registered Entity and Regional Entity's perspective.
Yes
Yes
Yes
Alliant Energy reiterates that Inclusion I4a must be removed from the definition of the BES. It makes no technical sense, and creates an extremely burdensome compliance workload and risk.
Individual
Nazra Gladu
Manitoba Hydro
Yes
Yes
Yes
Yes
(1) General Comment - replace “ Board of Trustees ” with “ Board of Trustees’ ” throughout the applicable documents/standards for consistency with other standards.
Individual
Si Truc PHAN
Hydro-Quebec TransEnergie
Yes
Yes
Yes

Yes
HQT's position remains the same concerning the BES Definition, as limitations on exclusion are increased in phase 2 as imposed by FERC without proper hearing of non-US jurisdictions. One other comment on the Implementation plan refers to the second sentence of Effectives dates. The second sentence should be arranged differently as it refers both to "no regulatory approval required" and "applicable governmental authorities". The last part of the sentence should be moved with the first sentence to add clarity.
Individual
Kayleigh Wilkerson
Lincoln Electric System
No
Although appreciative of the drafting team's efforts, LES is concerned with the proposed inclusion of the individual dispersed power producing resources as part of the Bulk Electric System versus the point at which the resources aggregate to a capacity greater than 75MVA. As currently proposed, the burden would be on the registered entities to either seek multiple exclusions through the BES Exception Process or else race to add numerous BES Elements to existing programs, processes and maintenance schedules to ensure compliance with Reliability Standards such as PRC-005-1.1b, PRC-004-2a, FAC-001, etc. To prevent broad sweeping changes to existing compliance requirements without sufficient technical justification, LES recommends Inclusion I4a be removed altogether and I4b be retained. In the event a reliability-related need is identified in the future pertaining to the individual resources, LES suggests that revisions be made to those standards deemed applicable.
Individual
Don Schmit
Nebraska Public Power District
Yes
Still have concern with including individual wind turbines as it relates to total generation.
No
The white paper for the low voltage loop threshold is a logical review of the issues. We would like to see some clarification for certain configurations. For example, two 115kV/69kV parallel transformers at the same substation serving only load at 69kV and no looped 69kV lines: 1) with 115kV and 69kV bus tie breakers, 2) with no 115kV bus tie breaker but does have a 69kV tie breaker, 3) with no 115kV bus tie breaker and no 69kV tie breaker, and 4) with 115kV bus tie breaker and no 69kV tie breaker. All breakers are normally closed but if no breakers exist then transformers are connected directly by bus operating in parallel for all

cases. Does this make the interrupting device on the high side of each transformer BES elements? Does this make the transformer a BES element or suggest an analysis for an exception must be made to remove them from the BES? Our concern is how a PRC-005 audit/enforcement group will interpret these configurations if it is not clearly stated in an example or considered in the white paper. How would the SDT interpret a configuration where a 115kV “radial” line feeds a substation with a 56MVA 115/69kV transformer. The 69kV side of the transformer is connected to a networked 69kV system owned by another entity. The 69kV system does connect back to the transmission system in multiple points in the other entities system. There is some 69kV generation greater than 20MVA or 75MVA aggregate but the substation and line in question is not used for black start. Note the 115kV/69kV transformer would never allow greater than 75MVA to pass through it back to the 115kV line since the transformer is too small. Is the substation with the 115/69kV transformer a BES substation? Is the 115kV line to the 115kV/69kV substation BES? Please clarify. It seems transformer size should have some impact but the reference document does not reference this.
Yes
Yes
It is imperative to have the BES reference document be updated to reflect the latest changes and drafting team position on various items with the definition since the definition is not self-explanatory due to the significant BES system variations. Perhaps some additional examples with low voltage looped systems would be beneficial similar to the scenarios noted in question 2 above. We also have concerns with the disclaimer in the reference document on page 1 and noted below. We would hope this document would be endorsed by NERC to help address the complexity of the definition and to aid in transparency. “Disclaimer-This document is not an official position of NERC and will not be binding on enforcement decisions of the NERC Compliance Program. This reference document reflects the professional opinion of the DBES SDT, given in good faith for illustrative purposes only.”
Group
seattle city light
paul haase
Agree
Sacramento Municipal Utility District (SMUD)
Individual
Larry Watt
Lakeland Electric
Agree
Lakeland Electric supports the Florida Municipal Power Agency comments.
Individual
Bret Galbraith
Seminole Electric Cooperative, Inc.

Yes
(1) The definition utilizes the term “non-retail generation.” This term does not appear to be clarified within the definition. However, the drafting team has attempted to clarify the term in the guidance document. Unfortunately, the guidance document is not final, meaning that it can be revised before being finalized. Please define retail and non-retail generation as separate definitions for inclusion into the Glossary contingent upon each other or make the BES definition approval contingent on the guidance document being approved. See Exclusion E1(c). (2) 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/facility. See Inclusion I2. (3) 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 following language from the paragraph “or an enhancement of,” as it is more of a persuasive statement than an objective statement. (4) In Exclusion E1(c), please clarify that reactive devices, such as capacitor banks, can be included in this section also. Reactive devices are differentiated from real power devices in Inclusion I2 and so we request clarification that reactive devices can be included in Exclusion E1(c). (5) Inclusion I2 includes generation above 20 MVA/75MVA connected at 100 kV or higher. However, the base definition includes all generation units connected at 100 kV or higher. Units below 20 MVA/75MVA are never actually excluded. The net effect is to include all generation under the base definition regardless of size. To avoid future interpretation issues and ensure consistency with the intent communicated in the Phase 1 guidance document (page 13, Figure I2-6), Inclusion I2 needs to be written as an exclusion of units less than 20 MVA/75 MVA. If this not the intent of I2, then the definition needs to be modified to clarify the intent. (6) Exclusion E2 currently states “: (i) the net capacity provided to the BES does not exceed 75 MVA, and (ii) standby, back-up, and maintenance power services…”. This statement could easily be covered under the section currently labeled I2 and suggested above to be rewritten as an exclusion. We would like to suggest potential language to simplify the definition, eliminate inclusion I2 to ensure that units under 20 MVA/75 MVA are actually excluded from the definition, and incorporate these ideas into exclusion E2 so that Exclusion E2 would be: E2 – Generating resource(s) including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100 kV or above with: a) Gross individual nameplate rating less than 20 MVA. Or, b) Gross plant/facility aggregate nameplate rating less than 75 MVA. Or, c) One or more generating units on the customer’s side of the retail meter that serve all or part of the retail Load with electric energy if: (i) the net capacity provided to the BES does not exceed 75 MVA, and (ii) standby, back-up, and maintenance power services are provided to the generating unit or multiple generating units or to the

retail Load by a Balancing Authority, or provided pursuant to a binding obligation with a Generator Owner or Generator Operator, or under terms approved by the applicable regulatory authority. (7) It would be extremely valuable for the team as part of any guidance document to develop and review a decision tree supporting the definition and include this decision tree in the next revision of the guidance document.
Individual
Wayne Sipperly
New York Power Authority
LPPC
No
Inclusion 4b does not support a contiguous BES due to the exclusion of a portion of the path from the generator terminals to the resource aggregation point. Inclusion 4b is not consistent with the elements included under Inclusion I2 which applies to all generating resources.
Yes
Yes
Yes
Support the development of a SAR that will create a project to review all of the GO and GOP standards for effective applicability to dispersed power resources so that generator owners and operators are only subject to the Standards requirements that have reliability impacts and those standard requirements that are applicable to the generator type.
Group
Transmission Access Policy Study Group
William Gallagher
Yes
Although we support the SDT's willingness to address the lack of clarity caused by the previous posting's merging of I4 with I2, we are concerned that the wording of the new version of I4 does not capture the SDT's intent, and could lead to absurd results if read literally. As we understand it, the SDT's intent is to include only dispersed power producing resources that both (a) aggregate to more than 75 MVA, and (b) are connected through a system designed primarily for delivering capacity at a common point of connection of 100 kV or above. We believe that the SDT also intends that only the individual resources and the point from which they aggregate to 75 MVA should be included in the BES; in other words, the portion of the collector system that carries <75 MVA is not BES by virtue of I4. In order to express that intent clearly, we suggest the following revised text: I4 - Dispersed power producing resources that aggregate to a total capacity greater than 75 MVA (gross nameplate rating), and that are connected through a system designed primarily for delivering such

capacity from the point at which those resources aggregate to greater than 75 MVA to a common point of connection at a voltage of 100 kV or above. The BES portion of such resources includes: a) The individual resources, and b) The system designed primarily for delivering capacity 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. We believe that this text is consistent with the intent reflected in the diagram provided by the SDT in the comment form, and is more clear and accurate than the text of I4 as posted.
Yes
TAPS appreciates the SDT's work on the sub-100 kV loop issue. For the reasons set out in the SDT's white paper, and in TAPS' comments on the 30 kV threshold that was proposed in the first posting of Phase 2 of the BES definition project, TAPS strongly supports the proposed 50 kV threshold.
Yes
We suggest that the SDT clarify, either in the definition itself or in the reference document, that a momentary flow-through caused by an abnormal/contingency condition does not make a system ineligible for Exclusion E3. TAPS members are willing to work with the SDT on defining appropriate limits for such minimal, momentary flow-throughs.
Group
Southern Company
Wayne Johnson
Yes
The separation of dispersed generation where a collector system aggregates the total generation prior to connecting to the BES is clear in I4.
Yes
It is clear that looping facilities operating at voltages < 100 kV are NOT included in the BES and that contiguous loops operated at voltage < 50 kV in configurations being considered as radial systems does not affect this exclusion (i.e., they are also NOT included in the BES).
Yes
Yes
A) Inclusion I2a should be deleted and I2b should be used to define the threshold for all generating facilities. It is inconsistent to include a 21 MVA single generator (using I2a) and not include 74.5 MVA aggregated conglomeration of individual generators (using I2b). Since 75 MVA is used as the threshold in multiple places in this definition, a single generator at 75 connected at > 100kV should be the individual unit size threshold. B) Please specify what size of Reactive Power resources is included by I5. Order 773 acknowledged that Inclusion I5 is the technical equivalent of Inclusion I2 (generating resources) for reactive power devices. Since generating resources in Inclusion I2 are limited to those connected at 100kV or above with individual and aggregate ratings of 20MVA and 75 MVA, respectively, it could be

consistent -- if technically justified -- to include a threshold of >75MVAR for reactive power resources. Some technical justification should be pursued to determine whether 75 MVAR or a different size threshold would be appropriate to include in Inclusion I5 for Reactive Power resources. C) Southern Transmission believes that Exclusion E3 should include a limit on the size of a Local Network (LN). This position is consistent with the proposal from the NERC System Analysis and Modeling Subcommittee (SAMS). 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. The SAMS provided technical justification for a 300 MW load limit and Southern would be supportive of such a limit. Southern also agrees with the SAMS that the flow should be into the LN under single contingency conditions. (See NERC's Review of Bulk Electric System Definition Thresholds, March 2013, Section 5.3) D) Southern believes that the second part of Exclusion E3 should be deleted for three reasons: First, Exclusion E3a refers to "non-retail generation". Southern believes that whether a unit is "retail" or "non-retail" should be irrelevant when determining inclusion in the BES. Regardless of how a generator is classified, if it is large enough to impact flows on the system, then it should be included in the BES. Second, the phrase "and do not have" in the second phrase of Exclusion E3a is ambiguous and redundant and could lead to confusion and misapplication. Specifically, it is ambiguous as to whether the last phrase regarding aggregate non-retail capacity: (a) refers back to the generation resources identified in Inclusion I2, I3, or I4 (thus defining a smaller subset of generation resources from I2, I3, and I4 that are carved out from the definition of LN, but other Inclusion I2-I4 generation resources can be part of the local network); or (b) simply refers back to "generation resources" (therefore, local networks exclude BOTH Inclusion I2-I4 generation resources AND, separately, generation resources with aggregate non-retail generation >75MVA). Third, Inclusions I2 and I4 already both use the 75 MVA limit. It seems redundant to state that a Local Network under Exclusion E3a does not include generation resources with aggregate capacities greater than 75 MVA when Exclusion E3a already states that local networks do not include generation resources identified in Inclusion I2 and I4 (which, in turn, include generation resources with aggregate capacities above 75 MVA). To clarify and to eliminate confusing and unnecessary redundancy, Southern suggests striking all language after "Inclusion I4." Exclusion E3a should therefore read: "a) Limits on connected generation: The LN and its underlying Elements do not include generation resources identified in Inclusions I2, I3, or I4."

Individual

Mahmood Safi

Omaha Public Power District

No

Omaha Public Power District (OPPD) agrees and appreciates the SDT's efforts to provide clarity by separating dispersed power producing resources from Inclusion I2 and returned to its own separate Inclusion I4. However, OPPD is still concerned with the Inclusion I4a that includes the individual generator as part of BES. Where, the Inclusion I4b clearly and correctly recognizes the aggregate point to be identified as a BES facility. We agree that the

aggregation point (or bus) should be part of the BES, if the total aggregated generation is at 75 MVA or higher, as stated in the Inclusion I4b. OPPD believes that the individual unit by itself can't impact the reliability of BES. On the other hand, the compliance responsibilities that go along with are burdensome with no benefit to the reliability of the BES. Therefore, OPPD suggests consider removing Inclusion I4a from the BES Definition Inclusions. We strongly believe that I4b is completely addressing the dispersed power producing resources inclusion into BES. Additionally, OPPD supports comments provided by Madison Gas & Electric (MG&E).
Yes
Yes
No
Individual
Don Streebel
Idaho Power Company
Yes
Yes
Yes
Yes
1. In the wording for E3b (Local Networks), the phrase "and the LN does not transfer energy originating outside the LN for delivery through the LN" does not seem to add any value or specificity to the LN Exclusion. In fact, the phrase seems misleading and serves to add confusion since some amount of energy flowing in a parallel BES path outside the LN will always flow through the LN, even if it's just a trickle and does not impact the sign of the measured power flow at the LN points of connection. Suggested reword for E3b is "Real power flows only into the LN at each LN connection point." 2. We agree that your clarifying single-line diagram for Inclusion I4 (40 - 2 MVA generators aggregated up through the point of aggregation to the common point of connection) for dispersed power producing resources properly designates the point of aggregation of the dispersed power producing resources as a BES element. We also agree with the basis for this designation which states for the point of aggregation "where the individual generator nameplate ratings of the dispersed generation total > 75 MVA (actual 80 MVA) and a single point failure would result in loss of all generation contained on the dispersed generation site". However, following the same logic in basis, we do not agree with the BES designation for each individual 2 MVA generator in your

clarifying single-line diagram. We think it makes sense that the reliability of the power system should be considered for the loss of the 80 MVA and we agree that a potential single point of failure exists at the point of aggregation that could result in the loss of all generation. However, we do not think that the loss of one 2 MVA generator would have any significant negative impact on the reliability of the power system. If the loss of greater than 20 MVA via a single point failure scenario is deemed significant to the reliability of the power system (Inclusion I2, a), then that same logic suggests that each of the two buses that aggregates 40 MVA of generation should be designated as BES. If, on the other hand, due to the dispersed nature of the generation in the clarifying single-line diagram, the loss of greater than 75 MVA via a single point failure scenario is deemed significant to the reliability of the power system (Inclusion I2, b), then that same logic suggests that the point of aggregation that aggregates 80 MVA of generation should be designated as BES. No place in the BES core definition nor in any of the inclusions (or exclusions) is there a concern for the loss of 2 MVA of generation as having a negative reliability impact on the power system. Therefore, we would not designate each individual 2 MVA generator as BES as you have in your clarifying single-line diagram and would suggest the following wording for Inclusion I2 for your consideration: I2 - Generating resource(s) with: a) gross individual nameplate rating greater than 20 MVA, including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100 kV or above or, b) the point of aggregation of gross plant/facility with aggregate nameplate rating greater than 75 MVA, including the system designed primarily for delivering the aggregated capacity from the point where the resources aggregate to greater than 75 MVA to a common point of connection at a voltage of 100 kV or above. I4 - DELETED
Individual
Diane Barney
NARUC
Yes
NARUC shares the concern raised by New York about the Phase II Report’s failure to meet its purported goal of providing a technical justification for 100kV bright line rule and generation thresholds. NY raised specific concerns about a survey not being appropriate technical support for specific numbers and the drafting team did not specifically address this, or other concerns raised about the technical justification, in its response. NARUC is also concerned that the methodology utilized historically by the NPCC was not considered as one of five alternatives. So in response to whether or not there are other concerns with this definition that have not been covered in previous questions and comments, NARUC notes that it shares these concerns that have been raised, as well as the lack of a response from the drafting team thus far and requests a thorough response.
Individual

Thomas Dvorsky
New York State Department of Public Service
Yes
NERC has an obligation to provide technical advice to FERC, so that any number provided to FERC by NERC is interpreted as technical advice. A major purpose of the BES Phase II effort was to establish a technical basis for the 100 kV brightline and the 20/75 MVA generation levels. While NERC has provided a report purportedly providing a technical basis for these threshold levels, the report fails to do so. NERC should not include any numbers in any definition or standard for which it cannot provide a technical basis. Surveys do not provide a technical basis. Particularly troublesome is the presentation of alternatives to the 100 kV brightline. The report authors looked at 5 alternatives to establishing a technical basis for determining the bulk system. The report failed to evaluate the methodology historically applied to the NPCC system. If a major NERC region was able to successfully apply their methodology, why was it not evaluated and why would it be impossible to expect other regions to perform a similar analysis as the base for determining the BES? This comment is being resubmitted as the response provided in the previous comment period does not address the issues raised.
Group
NAGF Standards Review Team
Patrick Brown
No
1. Replace the current ballot's draft I4 language: "I4 - Dispersed power producing resources consisting of: a) Individual resources that aggregate to a total capacity greater than 75 MVA (gross nameplate rating), and b) The system designed primarily for delivering capacity 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." With the proposed comment I4 language: "I4 - Dispersed power producing resource projects, or portion(s) thereof, designed primarily for supplying wholesale power (e.g., a wind farm, or solar farm) that aggregate to a total capacity greater than 75 MVA (gross nameplate rating) at a common point of connection to a voltage of 100 kV or above consisting of: a) The individual resources, and b) The delivery system designed primarily for delivering capacity from i) the point where those resources aggregate to the total connected capacity; to ii) a common point of connection at a voltage of 100 kV or above." Rationale: • "projects … designed primarily for wholesale" – nothing in this posted version distinguishes between generation for retail (behind the meter) and generation for wholesale. As such rooftop PVs, generator assistance programs, or other similar small power-producing incentives, might be otherwise interpreted as included under

I4. • “(e.g., a wind farm, or solar farm)” – Because the SDT’s I4 text-box will be dropped from the final version, we believe this inclusion is necessary to retain an illustration of the intent. • I4.a - While imposing BES Standards of governance toward management of individual small units is counter-productive and administratively burdensome, we do agree that differentiating applicability to various Standards should be specified through those Standards. To that end, we are dedicated to drafting and vigorously promoting a SAR to appropriately address dispersed power producing resource applicability within individual NERC Standards. In keeping with that commitment it is suggested that I4a be deleted from the BES definition. This would avoid temporarily imposing inappropriate requirements that would later have to be eliminated by modification of individual standard requirements. A better approach would be to add requirements where needed for individual small units. • I4.b – We believe our proposed wording: o Appropriately addresses impact to BES reliability. Rather than offering some illusion for reliability at a lesser impact level, this proposal recognizes that reliability rests in TPs, BAs, RCs, and TOPs responsibly addressing the single greatest contingency arising from, and the behavior of, dispersed power producing resources in the aggregate. Enforcing governance for management to any lesser level is not productive and has no true value to BES reliability. o Better aligns with FERC’s Determination within Order 770 paragraph 114. o Aligns with FERC’s Determination for I2 within Order 773 paragraph 91. o Aligns with FERC’s Determination for I2 within Order 773 paragraph 92.

Yes

1. The language of the proposed BES definition is rather convoluted and is therefore difficult to apply correctly without the Reference Document. The FERC order 773/773a-amended Reference Document is not complete or final for the phase-2 BES definition, however. Its exclusion E1 statement is that of phase-1, not phase-2, for example, and a disclaimer on p.1 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.” It appears that the phase-2 BES definition is being rushed through the approval process, and it would be preferable to take the time to compile a complete and consistent body of documentation before putting the matter up for a vote. This is especially important for correctly classifying very small, standby, non-Blackstart Resource gensets feeding the aux buses of generation plants for emergency purposes. Such emergencies include blackouts and max-generation situations, and in the latter case displacing some of the aux load can temporarily boost the net amount of power delivered by the plant. 2. Figure I2-5 of the Reference Document suggests that such standby generators are part of the BES, if the plant totals more than 75 MVA, because they "contribute to the gross aggregate rating of the site." Fig. I2-5 depicts all units exporting to the grid, however, and we are considering here only standby gensets feeding aux buses that remain net importers of power. Exclusion E3 may apply, however. Fig. S1-9b of the Reference Document shows a system composed of several generating plants and users, but the conclusions reached by the SDT should be unchanged if one drew a box around the diagram and labeled it a single generating plant. Specifically, the SDT decided that Exclusion 3 is invoked by the circumstance that the bus fed by the 5 MVA generator at lower

left is exclusively an importer of power, and this ruling should apply as well for standby gensets that feed aux buses within generation plants. Making such a classification would require that a Local Network (LN) can exist within a generation plant, as opposed be being found exclusively in the systems of TOs and DPs. Such an interpretation may be permitted by the circumstance that the definition of an LN uses the word "transmission" with a lower-case "t", as opposed the TO and DP-oriented term "Transmission" in the NERC Glossary, but the LN definition also references serving "retail customer load." This definition should be changed, or (better) the BES definition should explicitly state that gensets < 20 MVA feeding power-importing aux buses of generation plants are excluded from the BES. The term "nameplate rating" should be replaced by the NERC-defined term "Facility Rating" to harmonize the BES definition with NERC's standards. 3. Inclusion I2a should be deleted and I2b should be used to define the threshold for all generating facilities. It is inconsistent to include a 21 MVA single generator (using I2a) and not include 74.5 MVA aggregated conglomeration of individual generators (using I2b). Since 75MVA is used as the threshold in multiple places in this definition, a single generator unit (Facility Rating) at 75 MVA connected at > 100kV should be the individual unit size threshold. 4. Please specify what size of reactive power resources is included by I5 (> 75MVAR?).
Individual
Patrick Farrell
Southern California Edison Company
Yes
SCE believes that the revision to I4, the inclusion for dispersed power producing resources, is a move in the right direction, but we think that additional clarity could be provided by changing "common point of connection" to "common point of interconnection".
Yes
Clearly identifying "Real" Power makes sense and helps clarify the intent.
Group
PPL NERC Registered Affiliates
Brent Ingebrigtson
No
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; and PPL Generation, LLC, PPL Montana, LLC, and PPL Susquehanna, 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. The SDT should consider the comments of the North American Generator Forum in this respect.

Yes
a. The language of the proposed BES definition is somewhat vague and is therefore difficult to apply correctly without the Reference Document. The FERC order 773/773a-amended Reference Document is not complete or final for the phase-2 BES definition, however. Its exclusion E1 statement is that of phase-1, not phase-2, for example, and a disclaimer on p.1 states that "…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." It appears that the phase-2 BES definition is being rushed through the approval process, and it would be preferable to take the time to compile a complete and consistent body of documentation before putting the matter up for a vote. This is especially important for correctly classifying very small, standby, non-Blackstart Resource gensets feeding the aux buses of generation plants for emergency purposes. Such emergencies include blackouts and max-generation situations, and in the latter case displacing some of the aux load can temporarily boost the net amount of power delivered by the plant. Figure I2-5 of the Reference Document suggests that such standby generators are part of the BES, if the plant totals more than 75 MVA, because they "contribute to the gross aggregate rating of the site." Fig. I2-5 depicts all units exporting to the grid, however, and we are considering here only standby gensets feeding aux buses that remain net importers of power. Exclusion E3 may apply, however. Fig. S1-9b of the Reference Document shows a system composed of several generating plants and users, but the conclusions reached by the SDT should be unchanged if one drew a box around the diagram and labeled it a single generating plant. Specifically, the SDT decided that Exclusion 3 is invoked by the circumstance that the bus fed by the 5 MVA generator at lower left is exclusively an importer of power, and this ruling should apply as well for standby gensets that feed aux buses within generation plants. Making such a classification would require that a Local Network (LN) can exist within a generation plant, as opposed be being found exclusively in the systems of TOs and DPs. Such an interpretation may be permitted by the circumstance that the definition of an LN uses the word "transmission" with a lower-case "t", as opposed the TO and DP-oriented term "Transmission" in the NERC Glossary, but the LN definition also references serving "retail customer load." This definition should be changed, or (better) the BES definition should explicitly state that gensets < 20 MVA feeding power-importing aux buses of generation plants are excluded from the BES. b. The term "nameplate rating" should be replaced by the NERC-defined term "Facility Rating" to harmonize the BES definition with NERC's standards. c. Inclusion I2a should be deleted and I2b should be used to define the threshold for all generating facilities. It is inconsistent to include a 21 MVA single generator (using I2a) and not include 74.5 MVA aggregated conglomeration of individual generators (using I2b). Since 75MVA is used as the threshold in multiple places in this definition, a single unit (facility rating) at 75 MVA connected at > 100kV should be the individual unit size threshold. d. Please specify what size of reactive power resources is included by I5 (> 75MVAR?).
Group

SERC Planning Standards Subcommittee
Jim Kelley
Yes
Yes
In our opinion, the SDT has improved the E1 exclusion criteria by increasing the 30 kV threshold to 50 kV. We wish to thank the SDT for its diligence in justifying an increase to 50 kV. However, we still believe that the threshold is too low and would like to see it raised to at least to 70 kV.
Yes
Yes
E3b: The testing conditions for E3b should be clearly stated, namely for all facilities in service or for single transmission contingency conditions. We believe that the criteria need to be anchored so as not to manufacture a justification for inclusion of local network facilities as BES facilities Add word “normally” between “not” and “transfer” to E3b: Real Power flows only into the LN and the LN does not normally transfer energy originating outside the LN for delivery through the LN; and We do not believe that 1 MW of back-feed from local network facilities to transmission facilities for a few hours of the year constitutes classification of the local network facilities as BES facilities. We believe that the magnitude of the injections from the local network should be reviewed in line with other injections into the transmission system such as a) generators with a nameplate greater than 20 MVA, or b) aggregate resources greater than 75 MVA. In our opinion, the standard puts additional burden on local network owners including local subtransmission network owners to prove that their facilities should be excluded from consideration as BES facilities. In theory, this testing could be included in the annual TPL contingency analysis, but it may not be possible to complete this type of analysis before the end of the year for numerous models reflecting varying system conditions. It was suggested in the last webinar that SCADA data could be used to prove that there was no back-feed from the local network to the transmission system, but the accuracy of some SCADA data at low flow levels can be suspect and the SCADA data does not identify the exact system conditions that were experienced when the SCADA measurements were recorded, including outages to local subtransmission facilities. We appreciate the work of the SDT to try and provide a reasonable and balanced approach to the determination of BES facilities, and within a very short period of time. We ask that the injections into the transmission network from the various generation and local network sources be considered on a comparable basis in the determination of BES facilities. The comments expressed herein represent a consensus of the views of the above named members of the SERC PSS and the SERC OC Review Group only and should not be construed as the position of the SERC Reliability Corporation, or its board or its officers.
Individual

Scott Langston
City of Tallahassee
Yes
Yes
Yes
No
Individual
Oliver Burke
Entergy Services, Inc.
Agree
SERC OC Review Group comments
Individual
Terry Volkmann
Volkmann Consulting, Inc
No
There is no technical justification to include disperse generation into the BES definition. The impact of the aggregation is studied and addressed in the FAC-001 and FAC-002 processes. Once the effects of dispatchability and frequency / voltage control in aggregation are addressed and mitigated in these processes, the inclusion of each individual generator into the BES definition provides no further value to the industry and reliability.
Yes
Yes
No
Group
SPP Standards Review Group
Robert Rhodes
Yes
While we don’t have an issue with separating I4 from I2 as in the previous draft, we do have

concern with the wording of the inclusion, especially the phrase ‘primarily designed’. While the diagram provided in the comment form clearly shows the distinction, it is difficult to pull it from the wording of I4. Additionally, we are confused by what was explained during the NERC industry webinar and what is shown in the above figure. The figure and the words in I4 indicate the point of aggregation is included in the BES. The discussion during the webinar did not include it in the BES.
Yes
Yes
This change has been made to clarify the drafting team’s intent. We would be interested in knowing what that intent is.
Yes
In the Implementation Plan, delete ‘go’ at the beginning of the 3rd line of the 1st paragraph. Whitepaper On Page 9, Line 9 of the 1st paragraph, delete the ‘/’. On Page 9, Line 3 of the 2nd paragraph, replace ‘represent’ with ‘represents’. On Page 9, Line 4 of the 2nd paragraph, replace ‘distribute’ with ‘flow’.
Group
Florida Municipal Power Agency
Frank Gaffney
No
FMPA thanks the SDT for its efforts. Although FMPA agrees with separating I4 from I2, we believe the SDT made a grammatical / logical error in the new I4. Inclusion I4 as posted reads: I4 - Dispersed power producing resources consisting of: a) Individual resources that aggregate to a total capacity greater than 75 MVA (gross nameplate rating), and b) The system designed primarily for delivering capacity 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. The logical structure of I4 a) and I4 b) read literally does not reflect the intent of the SDT. The SDT seems to want to both: i) Identify the intersection of bullet a) and bullet b) [e.g., only a) vehicles with b) more than 2 axels need to be weighed at a truck stop, e.g., the subset of a) vehicles and b) with more than two axels] ii) While at the same time describe what is part of the BES [e.g., a pie is made of a) filling and b) crust, e.g., the addition of a) and b)]. The use of “and” at the end of bullet a) read literally would be interpreted as adding a) and b), i.e., a pie being made of filling and crust, and does not limit the scope to the intersection of bullets a) and b). That is, the BES pie is made of individual resources that aggregate to > 75 MVA with no criteria over which that aggregation is performed (is it service territory, geography, within a fence, etc.) and b) the portion of a collector system that carries > 75 MVA in aggregation. The word “and” cannot perform both functions of adding a)+b) while at the same time identifying the intersecting subset of set a) and set b), which is what the SDT seems to be attempting to do. What the team must have meant was: I4 - Dispersed power producing resources that aggregate to a total capacity greater than 75 MVA (gross

nameplate rating), and that are connected through a system designed primarily for delivering such capacity from the point at which those resources aggregate to greater than 75 MVA to a common point of connection at a voltage of 100 kV or above. The BES portion of such resources includes: a) The individual resources, and b) The system designed primarily for delivering capacity 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. This intent is reflected in the diagram provided by the SDT in the comment form. This grammatical / logic error almost caused FMPA to vote Negative. The version of I4 posted read literally, an auditor does not know on what basis the 75 MVA of generation would be integrated, e.g., over the service territory of the entity? The auditor also is uninformed of whether this includes behind the meter generation or not. FMPA implores the SDT to correct this grammatical / logical error. If this error is not corrected, we will likely be changing our vote, and making recommendations to vote Negative on recirculation / final ballot.
Yes
Yes
Individual
Ryan Walter
Tri-State Generation and Transmission Association, Inc.
No
The NERC draft shows a schematic for resources that aggregate at a single bus location. Tri-State Generation and Transmission Association, Inc. (Tri-State) has included a drawing (Sent via email to Wendy Muller (NERC Standards Development Administrator)) that shows four examples of distributed generation that could have been developed as phases of a single developer or as multiple developers. The drawings show Tri-State's interpretation of which elements (highlighted in yellow) would be included based on the draft BES definition Inclusion I4. As written, it would include any line element from the point where the aggregated generation exceeds 75 MVA through the transformer that steps the voltage up to 100 kV or greater and include every dispersed generator attached to the line, even if it is a solitary unit. Please provide comments as to our interpretation. Inclusion I4a should be deleted. It does not appear to follow the intent of the FERC Order 773. In Order 773, paragraph 106 "NERC states that the inclusion is meant to address the dispersed power producing resources themselves, not the individual elements of the collector systems operated below 100 kV." Tri-State agrees with the EEI comment within this paragraph, "that inclusion I4 applies to generating resources meeting the threshold in the aggregate, not the individual generating units". There is no apparent requirement within the Commission Determination where FERC is requiring this inclusion. Tri-State does not find the inclusion of individual generating resources as low as 2MVA beneficial to the BES. A loss of a 2MVA

generating resource on low voltages does not pose the same risk as the loss of an aggregated loss of 75MVA. If inclusion I4a is not deleted, a minimum MVA level for the individual resource to be included in the BES should be added, just as I2 has. Tri-State recommends the Standard Drafting Team replace the current ballot's draft I4 language with: "The system designed primarily for delivering capacity of dispersed power resources 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."
Yes
Yes
No
Group
BANC & SMUD
Joe Tarantino
No
Although we believe the Drafting Team has provided vast improvement to the Draft #2 of the Phase 2-I4 BES Definition SMUD is posting a Negative position for Draft #2 for the following reasons. Salient Issues: • In accordance with Paragraph 115 of the Commission's Order 773, exclude the collector system from the BES definition. o Wind/Solar BES delineation should be limited the GSU where the total plant capacity is connected at a common point to 100kV or greater. o During Phase-1, it was suggested that a 75 MVA threshold be established where the loss of a single element would render the entire 75 MVA of resources unavailable. This was in lieu of including the individual small-scaled machines as BES to avoid subjecting those machines to administrative burden for little or no impact on the BES as compared to the compliance obligation. • Redundant to TPL & TOP standards where loss of the resource(s) for a single element is addressed in system studies that include evaluation for adequate level of resources, system impacts and Single Largest Contingencies. • Must include the phrase "(e.g., wind or solar)" after "Dispersed power producing resource projects" to fully clarify the applicability of Inclusion I4. • Support a Standard Authorization Request or other mechanism to reduce administrative burden for compliance to specific standards (e.g., PRC-004 (Misoperations) & PRC-005 (Maintenance & Testing). The following is suggested wording for I4 that are associated with the points above: "I4 - Dispersed power producing resource projects, or portion(s) thereof, designed primarily for supplying wholesale power (e.g., a wind farm, or solar farm) that aggregate to a total capacity greater than 75 MVA (gross nameplate rating) at a common point of connection to a voltage of 100 kV or above consisting of: a) The individual resources, and b) The delivery system designed primarily for delivering capacity from i) the point where those resources aggregate to the total connected capacity; to ii) a common point of connection at a voltage of 100 kV or above." Rationale: 1. "projects …

designed primarily for wholesale…": Nothing in this posted version distinguishes between generation for retail (behind the meter) and generation for wholesale. As such, rooftop PVs, generator assistance programs, or other similar small power-producing incentives, might be otherwise interpreted as included under I4. 2. "(e.g., a wind farm, or solar farm)": Because the SDT's I4 text-box will be dropped from the final version, we believe this inclusion is necessary to retain an illustration of the intent. 3. I4.a: While applying BES NERC Reliability Standards to the management of individual small units is counter-productive and administratively burdensome, we do agree that differentiating applicability of various Standards should be specified within those Standards. 4. I4.b: We believe the proposed wording: a. Appropriately addresses impact to BES reliability. Rather than offering some illusion for reliability at a lesser impact level, this proposal recognizes that reliability rests in TPs, BAs, RCs, and TOPs responsibly addressing the single greatest contingency arising from, and the behavior of, dispersed power producing resources in the aggregate. Enforcing governance for management to any lesser level is not productive and has no true value to BES reliability. b. Better aligns with FERC's Determination within Order 770 paragraph 114. c. Aligns with FERC's Determination for I2 within Order 773 paragraph 91. d. Aligns with FERC's Determination for I2 within Order 773 paragraph 92.
Yes
Yes
During Phase-1, it was suggested that a 75 MVA threshold be established where the loss of a single element would render the entire 75 MVA of resources unavailable. This was in lieu of including the individual small-scaled machines as BES to avoid subjecting those machines to administrative burden for little or no impact on the BES as compared to the compliance obligation. (Please refer to response to Q2 for additional details.)
Group
PacifiCorp
Kelly Cumiskey
No
The SDT has made significant progress by separating dispersed power producing resources from traditional generating resources in Inclusion I2. By including I4 subpart (b), the SDT has identified the critical element(s) that impact reliability. However, by failing to sufficiently address the real issue of the impact of the mandatory reliability standards on individual dispersed power resources, the SDT has perpetuated a gross error identified during phase one of the BES definition project, by including each "individual" dispersed power producing resource as potentially within the scope of the BES. During NERC's August 21, 2013 webinar on this project, the presenter emphasized the critical nature of the aggregate generation of dispersed power producing resources for the reliability of the interconnected transmission system. To that end, Inclusion I4 subpart (a) is inconsistent with NERC's express statements

concerning the critical nature of the generation in the aggregate. The presenter also indicated that those reliability standards that apply to the GO/GOP functions should be addressed via a SAR in order to modify those standards that impose an unreasonable burden on sectors within the industry without providing a commensurate benefit to reliability. PacifiCorp believes that the appropriate manner to address this discrepancy is in fact not to submit a SAR to modify the standards, but rather to first eliminate Inclusion I4 subpart (a) – and thus remove the collective set of individual resources from within the BES – and then modify those standards in the future to address any lingering reliability gaps that may apply to dispersed power producing resources on an individual basis. PacifiCorp recommends the following language for I4: Dispersed Power Producing Resources: For dispersed power producing resources that aggregate to a total capacity greater than 75 MVA, the system designed primarily for delivering capacity from the point where such resources aggregate to greater than 75 MVA to a common point of connection at a voltage of 100 kV or above. Note: While individual dispersed power producing resources are not considered part of the BES, that does not exempt registration as a GO or GOP for those entities that solely own and/or operate such resources where the aggregate is greater than 75 MVA. 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. Examples could include but are not limited to solar, geothermal, energy storage, flywheels, wind, micro-turbines, and fuel cells. PacifiCorp's justification for this revised language is as follows: a dispersed power producing resource necessarily consists of individual units of a limited size to take advantage of the distributed nature of the resource (e.g., wind or solar) upon which the facility relies for its fuel source. One benefit of such facilities' unit size and geographical distribution is that the facility is not as susceptible to a substantial loss of generating capability as a single unit of 20 MVA or greater (the registration threshold for a single generating unit). If the arrayed generators were each 2 MVA then the probability of losing 20 MVA at the generator level would be .00000001%. If the units were 5 MVA each the probability of losing all four units at the generator level would be .01%. The probability of losing a single 20 MVA unit would be 10%. These variations illustrate that there will be different values depending upon the arrayed generator's size. Given the reliability advantage this diversity affords it does not seem reasonable to treat this type of facility in the same way as a single unit facility of 20 MVA or greater. As recognized by the SDT, a dispersed generating facility of 75 MVA or greater (NERC Registry Criterion Section III.c.2) can have an impact on the BES. To recognize this impact and to also account for the dispersed nature and reliability advantage as described above, PacifiCorp requests that the SDT exclude individual dispersed power producing resources from the BES through a revised Inclusion I4 substantially similar to the proposal above. A technical example of the impact of the loss of an individual wind turbine to the BES is available from PacifiCorp to the SDT upon request.
Yes
Yes

No
Individual
Alice Ireland
Xcel Energy
No
To be clear, Xcel Energy is strongly supportive of the change made to Exclusion E1, to raise the exclusion threshold for radial and local networks from 30 kV to 50 kV. However, we are voting negative due the unnecessary inclusion of dispersed power individual resources in Inclusion I4(a). We understand that the individual dispersed generators ended up being included in the Phase I BES definition, but based on the development history, it is clear that the industry did not believe they should be included and thought they WERE NOT included. It wasn't until the guidance document was finalized that it was apparent where the drafting team landed on the subject. Phase II of this project provides the best opportunity to refine and improve the BES definition such that industry compliance efforts are focused on activities that will truly have an impact on reliability. Please see our detail comments and justifications below: While we strongly support the separation of I2 and I4 and the 75 MVA threshold for aggregating facilities in Inclusion I4 (b), Xcel Energy continues to disagree with the inclusion of small individual dispersed generators per Inclusion I4 (a). We provided alternative language for I4 in the last comment period. That recommendation still stands. Including individual dispersed generators in the BES definition will cause a huge diversion in work activities as entities are forced to simultaneously seek relief via the Exception Process to exclude reliability insignificant individual dispersed generators 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. NERC and the Regions will be faced with a huge backlog of exception requests for small distributed generators while Generator Owners with dispersed generating assets will struggle to implement reliability standards that were never drafted with the intent of being applicable to anything but large scale generating stations. 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. Furthermore, with no requirement that the BES be contiguous, how can individual 2 MVA wind turbine generator at a >75 MVA wind farm have a greater effect on BES reliability than an identical individual 2 MVA wind turbine at a <75 MVA wind farm? With no technical rationale or difference in effects on BES reliability, how can identical 2 MVA units legally be treated so differently? In the Consideration of Comments document for the first draft of 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 small scale generation and recommended that the industry create a SAR to call for this action. 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 major regulatory burden with no commensurate improvement in grid reliability. Examples: • PRC-005-2 Protection System testing – the based relay test requirements were developed with large generators in mind, and differ significantly from requirements in DOE Order 661A, of 2005 that requires 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 is not addressed here. 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 on 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. This level of reporting, at typically less than 3 MVA, is much less that 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 where it is quite evident that small scale dispersed generators were not considered during the standard's development. Unless Inclusion I4 (a) is eliminated, 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?
Yes
Xcel Energy strongly supports this modification.
Yes
No
Group
Bonneville Power Administration
Jamison Dye
Yes
Yes
Yes

No
Individual
Russel Mountjoy
MRO
No
MRO recommends the removal of I4 a) and 14b Industry requested the point of aggregation to be added in place of the individual generators themselves, not as well. The inclusion of this statement, I4 b, tends to lead industry to believe the individual generators will still remain under the new definition of the BES in addition to the aggregation point. The addition of individual resources which are not material to the BES creates undue burden on the registered entities and regional entities through the process of identifying these assets in order to have to apply for an exception due to these assets not being material to the BES. Proposed re-write of I4: Aggregate point where dispersed power producing resources aggregate at a common bus to a total capacity greater than 75 MVA (gross name plate rating) linking to a common point of connection at a voltage of 100kV or above.
Yes
Yes
No
Group
Duke Energy
Colby Bellville
Yes
Duke Energy agrees with the changes made by the SDT.
Yes
Duke Energy agrees with the modifications made by the SDT.
Yes
No
Individual
David Kiguel (by Ayesha Sabouba)
Hydro One

Yes
We reluctantly support the separation of I2 and I4 because we believe that their wordings in the BES definition as approved by the industry, NERC BOT, FERC and applicable governmental authorities in Canada should have been retained. In our opinion, I4 is meant for renewable energy resources (in particular Wind). These resources are inherently different when considered for planning and for real time operations. This change will essentially designate every element of a wind farm above 75MVA to its interconnection at 100kV as a BES element including the medium voltage collector systems (less than 50kV) adding burden which may not be necessary. Further, it is not clear what and how standards will apply to collector systems designated as BES.
Yes
We agree that 50kV is more reasonable and are voting positively to the change made by SDT. This change was essentially initiated to address a FERC directive in its Order 773. However it should be noted that the demarcation point between transmission and distribution may be different in non FERC jurisdictions, such as Canadian provinces. In establishing voltage thresholds, NERC needs to consider non-US legislated demarcation points, and the standard development process must make allowances for such regulatory and/or jurisdictional differences and frameworks consistent with NUC 001 and TPL footnote b. We suggest that NERC and the SDT consider revising Note 2 to read as follows: Note 2 – The presence of a contiguous loop, operated at a voltage level of 50 kV or less, between configurations being considered as radial systems, does not affect this exclusion. Non-US Registered Entities can adopt the same voltage level or should implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency.
Yes
Yes
In Canada, local load reliability requirements are under the provincial authority of local regulators such as the Ontario Energy Board in Ontario. We understand that NERC needs to follow FERC Orders and directives. In our opinion NERC must ensure that any provisions within the BES definition and/or NERC standards that are to address load reliability and load supply continuity issues and NOT interconnected BES reliability should be limited to the FERC jurisdiction only. Accordingly we suggest that when addressing such requirements in a standard it must include that for a non-US Registered Entity it should be implemented in a manner that is consistent with, or under the direction of, the applicable governmental authority or its agency in the non-US jurisdiction. Good examples to address these issues are through the Standards process as was done for NUC 001 and TPL001 Footnote b.
Individual
Andrew Z. Pusztai
American Transmission Company, LLC
No

ATC appreciates the changes the SDT made to I4, however, believe the wording of I4a still does not adequately communicate the desired treatment of small dispersed power producing resources as an aggregate, rather than an individual basis, when the aggregate capacity is 75 MVA or more. To address this issue, we suggest the following wording change to I4a, “Aggregate of dispersed resources when they aggregate to a total capacity of greater than 75 MVA (gross nameplate rating, and”
Yes
Yes
Yes
ATC has the following additional comment for consideration by the SDT: • Exclusion 3b does not currently define the limited set of conditions entities are to consider when determining if real power flows only into the local network (LN). Without this clarification, entities will have no certainty regarding the exclusion determination made, which can have a material impact on the entity under all of the NERC standards. ATC recommends the following revision to E3b: E3b) Real Power flows only into the LN under intact system and most severe single contingency conditions and the LN does not transfer energy originating outside the LN for delivery through the LN; and’ This revision is warranted for the reason noted above. In addition, the language is consistent with how the system is operated under the NERC TOP standards and the proposed addition matches NERC’s own statements to the FERC as recorded in paragraph 71 of FERC Order 773-A. As noted in the same paragraph, FERC agreed with NERC’s reasoning. Therefore, this clarification should be recorded in the BES definition.
Individual
John Robertson
First WInd
No
First Wind supports the separation of I2 and I4 and the 75 MVA threshold for aggregating facilities in Inclusion I4 (b), and the exclusion of collector system components that aggregate less than 75 MVA of generation, First Wind disagrees with the inclusion of small individual dispersed generators per Inclusion I4 (a). This problem can be resolved by either removing I4 (a) in its entirety or revising it 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. While individual generators were included in the Phase I BES definition, Phase II of this project provides an opportunity to refine and improve the BES definition such that industry compliance efforts are focused on activities that will truly have a beneficial impact on reliability. 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. Regions 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. First Wind supports the exclusion of collector system components that aggregate less than 75 MVA, it seems inconsistent that a 1-2 MVA individual dispersed generator is deemed significant to reliability but the equipment that is utilized to connect multiple dispersed generators totaling up to 75 MVA is deemed not significant to reliability. The logic that led to the exclusion of collector system equipment that aggregates less than 75 MVA, as well as the logic expressed on the webinar that 75 MVA is the threshold at which the loss of generation could have an impact on BES reliability, argues for also excluding individual dispersed generators. Furthermore, what is the logic of including individual 1-2 MVA wind turbine generator at a >75 MVA wind farm while excluding an individual wind turbine at a <75 MVA wind farm? With no technical rationale or difference in effects on BES reliability, how can identical 2 MVA units be treated so differently? The only compelling reason for applying BES standards to individual dispersed generators would be if there were a real risk of a common mode failure affecting a large share of the dispersed generators in a >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 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 >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. No compelling rationale has been offered for why including individual dispersed wind turbine generators in the BES definition will improve grid reliability.
Yes
Yes
No
Individual
Anthony Jablonski
ReliabilityFirst
Yes
Even though ReliabilityFirst votes in the Affirmative, ReliabilityFirst is aware of some concerns among Registered Entities for the potential issue of individual wind units (i.e. single

generators) being required to register based on the language of the revised definitions (specifically I4). Though ReliabilityFirst staff agrees with I4 and does not believe this is an issue, ReliabilityFirst recommends NERC and the Regional Entities come up with a common understanding on how Entities are registered based on their ownership of wind units which are designated as BES through the new definition.
Group
Associated Electric Cooperative, Inc. - JRO00088
David Dockery
No
FOR: Inclusion I4 REPLACE: Complete wording of I4 WITH: “I4 - Dispersed power producing resource projects , or portion(s) thereof, designed primarily for supplying wholesale power (e.g., a wind farm, or solar farm) that aggregate to a total capacity greater than 75 MVA (gross nameplate rating) at a common point of connection to a voltage of 100 kV or above consisting of: a) The individual resources, and b) The delivery system designed primarily for delivering capacity from i) the point where those resources aggregate to the total connected capacity; to ii) a common point of connection at a voltage of 100 kV or above.” RATIONALE: (1)• “projects … designed primarily for wholesale” – nothing in this posted version distinguishes between generation for retail (behind the meter) and generation for wholesale. As such roof-top PVs, generator assistance programs, or other similar small power-producing incentives, might be otherwise interpreted as included under I4. (2)• “(e.g., a wind farm, or solar farm)” – Because the SDT’s I4 text-box will be dropped from the final version, we believe this inclusion is necessary to retain an illustration of the intent. (3)• I4.a - While imposing BES Standards of governance toward management of individual small units is counter-productive and administratively burdensome, we do agree that differentiating applicability to various Standards should be specified through those Standards. To that end, we are dedicated to drafting and vigorously promoting a SAR to appropriately address dispersed power producing resource applicability within individual NERC Standards. (4)• I4.b – We believe our proposed wording: o Appropriately addresses impact to BES reliability. Rather than offering some illusion for reliability at a lesser impact level, this proposal recognizes that reliability rests in TPs, BAs, RCs, and TOPs responsibly addressing the single greatest contingency arising from, and the behavior of, dispersed power producing resources in the aggregate. Enforcing governance for management to any lesser level is not productive and has no true value to BES reliability. o Better aligns with FERC’s Determination within Order 770 paragraph 114. o Aligns with FERC’s Determination for I2 within Order 773 paragraph 91. o Aligns with FERC’s Determination for I2 within Order 773 paragraph 92. ALTERNATE APPROACH: In the consideration of comments, the drafting team indicated that a SAR might be submitted to appropriately adjust GO and GOP standards requirements for dispersed generating facilities. We agree that is the approach to undertake. In order to

support this approach, I4 should be deleted to avoid the situation where inappropriate provisions could become effective and compliance become difficult or impossible for entities until work is completed through the SAR to adjust those requirements. In the filing with FERC this procedure could be explained so that FERC can be assured that their approval of inclusion of dispersed generating facilities in the phase I order will be appropriately implemented. AECI also supports NAGF's recommendation for the SDT with regard to I2 changes.
Yes
AECI appreciates the SDT's willingness to tackle this issue and provide a higher kV level than 0, as well as its technical justification.
Yes
Yes
AECI supports the NAGF's draft comment for concern, duplicated immediately below: "The language of the proposed BES definition is rather convoluted and is therefore difficult to apply correctly without the Reference Document. The FERC order 773/773a-amended Reference Document is not complete or final for the phase-2 BES definition, however. Its exclusion E1 statement is that of phase-1, not phase-2, for example, and a disclaimer on p.1 states that "…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." It appears that the phase-2 BES definition is being rushed through the approval process, and it would be preferable to take the time to compile a complete and consistent body of documentation before putting the matter up for a vote. This is especially important for correctly classifying very small, standby, non-Blackstart Resource gensets feeding the aux buses of generation plants for emergency purposes. Such emergencies include blackouts and max-generation situations, and in the latter case displacing some of the aux load can temporarily boost the net amount of power delivered by the plant. Figure I2-5 of the Reference Document suggests that such standby generators are part of the BES, if the plant totals more than 75 MVA, because they, "contribute to the gross aggregate rating of the site." Fig. I2-5 depicts all units exporting to the grid, however, and we are considering here only standby gensets feeding aux buses that remain net importers of power. Exclusion E3 may apply, however. Fig. S1-9b of the Reference Document shows a system composed of several generating plants and users, but the conclusions reached by the SDT should be unchanged if one drew a box around the diagram and labeled it a single generating plant. Specifically, the SDT decided that Exclusion 3 is invoked by the circumstance that the bus fed by the 5 MVA generator at lower left is exclusively an importer of power, and this ruling should apply as well for standby gensets that feed aux buses within generation plants. Making such a classification would require that a Local Network (LN) can exist within a generation plant, as opposed be being found exclusively in the systems of TOs and DPs. Such an interpretation may be permitted by the circumstance that the definition of an LN uses the word "transmission" with a lower-case "t", as opposed the TO and DP-oriented term "Transmission" in the NERC Glossary, but the LN definition also references serving "retail

customer load." This definition should be changed, or (better) the BES definition should explicitly state that gensets < 20 MVA feeding power-importing aux buses of generation plants are excluded from the BES. Additionally, the MVA size of reactive power generator that is included by I5 should be specificed. "
Group
ACES Standards Collaborators
Ben Engelby
Yes
(1) We thank the drafting team for separating dispersed power producing resources to a separate inclusion category. This avoids some of the confusion in the prior posting. (2) We have a question regarding the diagram provided in the comment form. Why is each generating unit considered a part of the BES? Wouldn't the point of aggregation be the first BES element? If a single dispersed power producing resource fails, there is no impact on the BES. We request the drafting team consider this aspect.
Yes
We thank the drafting team for increasing the minimum threshold to 50 kV for sub-100 kV looped radial systems.
Yes
Yes
We understand that NERC has developed a process for handling exception requests. We are concerned this process could be similar to the TFE exception process. We recommend that the exception process should be included with future BES definition postings with the opportunity to comment on the process.
Individual
Michael Goggin
American Wind Energy Association
No
While we strongly support the separation of I2 and I4 and the 75 MVA threshold for aggregating facilities in Inclusion I4 (b), and the exclusion of collector system components that aggregate less than 75 MVA of generation, we still strongly disagree with the inclusion of small individual dispersed generators per Inclusion I4 (a). This problem can be resolved by either removing I4 (a) in its entirety or revising it 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. While individual generators were included in the Phase I BES definition, that is not a compelling reason why they should also be included in Phase II. Phase II of this project provides an opportunity to refine and improve the BES definition such that industry compliance efforts are focused on activities that will truly have a beneficial

impact on reliability. 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. In the Consideration of Comments document for the first draft of 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 small-scale generation and recommended that the industry create a SAR to call for this action. 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. 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 that 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? On 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. While we support the exclusion of collector system components that aggregate less than 75 MVA, it seems inconsistent that a 2 MVA individual dispersed generator is deemed significant to reliability but the equipment that is utilized to connect multiple dispersed generators totaling up to 75 MVA is deemed not significant to reliability. The logic that led to the exclusion of collector system equipment that aggregates less than 75 MVA, as well as the logic expressed on the webinar that 75 MVA is the threshold at which the loss of generation could have an impact on BES reliability, argues for also excluding individual dispersed generators. Furthermore, what is the logic of including individual 2 MVA wind turbine generator at a >75 MVA wind farm while excluding individual 2 MVA wind turbine at a <75 MVA wind farm? With no technical rationale or difference in effects on BES reliability, how can identical 2 MVA units be treated so differently? 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 >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 >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.
Individual
Dan Inman
Minnkota Power Cooperative
No
During the 8/21/2013 webinar the presenter emphasized the critical nature of the aggregate generation of dispersed power producing resources to the reliability of the interconnected transmission system. I4 subpart (a) is inconsistent with the stated critical nature of the aggregate generation. The presenter also indicated that standards that apply to GO/GOP associated standards should be addressed via a SAR to correct reliability standards that

impose a burden on the industry without providing a significant benefit to reliability. The appropriate manner to address this discrepancy is not to submit a SAR to modify the standards that would inappropriately invoke requirements on individual generators due to their inclusion in the BES definition, but to eliminate I4 subpart (a) and modify standards in the future to address any reliability issues that may need the imposition of requirements for individual dispersed power producing resources. The following language is suggested for a revised I4: I4 - Dispersed power producing resources consisting of the system designed primarily for delivering capacity 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. Proceeding in this manner will avoid temporary inappropriate standards requirements being applied to individual dispersed power resources and still address the individual resources in standards where needed to support reliability.
Yes
Yes
No
Individual
Richard Vine
California Independent System Operator
No
It is clear that the SDT has taken significant action to distinguish between dispersed power producing resources and traditional generating resources through modification of inclusion I4. However, the California ISO is concerned that the new verbiage under I4 a), as well as the color-coded diagram included on the comment form to provide clarification of BES elements, actually results in ambiguity as to whether each individual power producing resource must be treated as a BES Element. In particular, use of the phrase “Individual resources that aggregate…” under I4 a), along with use of the word “and” between I4 a) and I4 b), leaves open to interpretation whether each individual power producing resource (e.g., each wind turbine within a wind farm that aggregates to greater than 75 MVA) must be treated as a BES element or whether only the aggregated whole is a BES element. Though it may be that the SDT meant to capture that the combination of all aggregated resources and the delivery system together comprise a BES element, it could be construed that each individual resource under a) is a BES element and the system for delivering capacity referred to under b) is a BES element. This is further confused by the drawing included on the comment form which uses a blue color to identify each individual power producing resource and uses the same blue color to identify the system for delivering capacity. The legend in the comment box above this drawing states “Green identifies non-BES portions of the Collector System. Blue identifies the dispersed power producing resources and BES Elements.” The ISO is concerned that this

ambiguity may create uncertainty regarding whether particular Reliability Standard requirements apply only to the aggregated resource as a whole or to the individual power producing resources that comprise the aggregated resource, which is a matter that is better addressed on a Standard-specific basis. In light of this ambiguity, the ISO is abstaining and recommends that the SDT clarify its definition so that the focus is on aggregated resource rather than the individual components.
Individual
Spencer Tacke
Modesto Irrigation District
No
No
Yes
I voted NO for the following reasons: 1. WECC studies have shown that there are thousands of MWs of wind and PV generating plants currently on-line, and thousands of MWs under development, in the WECC system, of 20 MW and less capacity units. Ignoring the impacts of these units on the BES would be a mistake, as recent studies by the WECC MVWG (Modeling and Validation Work Group) have shown (i.e., June 2013 Meeting). 2. The revisions have made the definition of the BES so complicated, that the definition is no longer in a form that can be applied in a straight forward and reasonable manner. Also, there are no technical justifications provided for some of the exclusion criteria (e.g, 75 MVA). 3. The best way to define the BES is by using the engineering methodology developed by the WECC BES Definition Task Force, and published in May 2010. That study work showed that for the location in question to have a material impact to the interconnected bulk electric power system, there must be an equivalent short circuit MVA exceeding 6000 at that location. Thank you.
Individual
Kenn Backholm
Public Utility District No.1 of Snohomish County
No
Snohomish supports the Project 2010-17 – Definition of the BES (Phase 2) Standard Drafting Team in its efforts to clarify the BES definition. Although Snohomish supports the current definition and will be voting affirmative, we are concerned with the compliance burden to

small dispersed generators that typically are less than 2 MW and have capacity factors in the 25 to 35% range, and may be inclined to change our position if the following issues are not resolved. Snohomish believes these concerns can be addressed within the Reliability Standards applicable to GO/GOPs or with the suggested changes below". 1.Replace the current ballot's draft I4 language: "I4 - Dispersed power producing resources consisting of: a) Individual resources that aggregate to a total capacity greater than 75 MVA (gross nameplate rating), and b) The system designed primarily for delivering capacity 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." With the proposed comment I4 language: "I4 - Dispersed power producing resource projects , or portion(s) thereof, designed primarily for supplying wholesale power (e.g., a wind farm, or solar farm) that aggregate to a total capacity greater than 75 MVA (gross nameplate rating) at a common point of connection to a voltage of 100 kV or above consisting of: a) The individual resources, and b) The delivery system designed primarily for delivering capacity from i) the point where those resources aggregate with a total connected capacity greater than 75MVA; to ii) a common point of connection at a voltage of 100 kV or above." Rationale: "projects … designed primarily for wholesale" – nothing in the currently posted version of Inclusion I4 distinguishes between generation for retail (behind the meter) and generation for wholesale. As such roof-top PVs, generator assistance programs, or other similar small power-producing incentives, might be otherwise interpreted as included under I4. There is a real possibility that, with net metering laws, tax incentives, and related public policies strongly favoring the development of, for example, small, individually-owned solar PV systems, those small systems could easily exceed the 75 MVA thresholds in the aggregate. Considered individually, these small systems have no discernible impact on the reliable operation of the BES. With sufficient market penetration, these systems might conceivably have some impact on the BES, but mediating that impact should be the responsibility of TPs, BAs, TOPs, and other system operators. The regulatory burden imposed on small owners of individual distributed generation systems that would result from classifying such small generators as part of the BES would be significant, and a strong disincentive running contrary to current public policy favoring such systems. Yet, because such small systems have no impact on the reliable operation of the BES, extending regulation in this way would have no benefit for BES reliability. • "(e.g., a wind farm, or solar farm)" – Because the SDT's I4 text-box will be dropped from the final version, we believe this language is necessary to clearly express the intent of the BES to cover utility-scale wind farms, solar farms, and similar installations that consist of many relatively small units that are aggregated for wholesale while excluding small, individually-owned systems, such as rooftop solar PV arrays, that are not aggregated for the wholesale market but are owned by and benefit individual retail customers • I4.a - Imposing BES related Reliability Standards on individual small units is counter-productive and administratively burdensome. To the extent that applying individual Reliability Standards to such small, non-aggregated units is demonstrably necessary to protect BES reliability, application should be governed by the language of individual Standards rather than by classifying such small systems as BES. To that end, we are dedicated to drafting and vigorously promoting a SAR to appropriately address the applicability of individual NERC Standards to dispersed power-producing resources. • I4.b

– We believe our proposed wording: oAppropriately addresses impact to BES reliability. The proposed language recognizes that reliability rests depends on TPs, BAs, RCs, and TOPs responsibly addressing the single greatest contingency arising from, and the behavior of, dispersed power producing resources in the aggregate. Enforcing reliability standards on the owners of small, dispersed, and non-aggregated resources is not productive and has no true value to BES reliability. Better aligns with FERC's Determination in Order 773 paragraph 114. , where FERC determined that it will not direct NERC to include collector systems within wind farms and similar generation systems in the BES through Inclusion I4. oAligns with FERC's Determination for I2 in Order 773 paragraph 91 and 92, that multiple step-up transformers that connect generators to the BES at above 100-kV should be included in the BES, while connections at lower voltages that operate as part of a local distribution system should not be classified as part of the BES.
Yes
Yes
No

**Figure submitted by Tri-State G&T referenced in Q1 comments:*

http://www.nerc.com/pa/Stand/Documents/BES_I4_Clarification_for_Included_Elements_09042013.pdf