Individual or group. (113 Responses)
Name (82 Responses)
Organization (82 Responses)
Lead Contact (31 Responses)
Contact Organization (31 Responses)
Question 1 (108 Responses)
Question 1 Comments (113 Responses)
Question 2 (103 Responses)
Question 2 Comments (113 Responses)
Question 3 (102 Responses)
Question 3 Comments (113 Responses)
Question 4 (101 Responses)
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Question 5 (99 Responses)
Question 5 Comments (113 Responses)
Question 6 (103 Responses)
Question 6 Comments (113 Responses)
Question 7 (106 Responses)
Question 7 Comments (113 Responses)
Question 8 (97 Responses)
Question 8 Comments (113 Responses)
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Question 10 (102 Responses)
Question 10 Comments (113 Responses)
Question 11 (103 Responses)
Question 11 Comments (113 Responses)

Group
Gerald Beckerle
Ameren
Yes
The SERC OC Standards Review Group agrees to the clarifying changes to the core definition in general; however, we maintain that 200kV and above is the correct bright line for the Bulk Electric System.
Yes
We agree in general with the revisions to the specific inclusions for transformers in I1; however, we believe the transformer voltage level should be 200kV or above.
Yes
We agree in general with the revisions to I2 for generation; however, we maintain that 200kV and above is the correct bright line for the Bulk Electric System.
No
We agree with the changes but believe clarity would be added by changing the word “identified” to “designated”.
Yes
No
We feel that this inclusion should be limited to dynamic devices with an aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) connected through a common point.
Yes
We suggest the wording “non-retail generation’ should be clarified with an explanation of why it is used in this exclusion.
No

Clarification needs to be provided for what is meant by E2 (ii), regarding generation on the customer's side of the retail meter; otherwise we have trouble developing a position on this question.
No
We would agree with the exclusion if the wording of the exclusion includes the following phrase (in quotation marks) added at the end of E3 b): Power flows only into the LN: The LN does not transfer energy originating outside the LN for delivery through the LN "under normal operating conditions".
Yes
Yes
The definition of the BES is referenced in several existing standards and the Statement of Compliance Registry Criteria. The SERC OC standards Review Group is concerned how this revised definition will impact entity registration, i.e., how will the revised definition be integrated into the Compliance Registry Criteria. The implementation plan should include how the integration is going to occur. The Rules of Procedure exception process should be further defined or referenced in this definition. "The comments expressed herein represent a consensus of the views of the above named members of the SERC OC Standards Review Group only and should not be construed as the position of SERC Reliability Corporation, its board or its officers."
Individual
Doug Hohlbaugh
FirstEnergy Corp.
Yes
However, consider changing the last sentence to read "This does not include facilities operated at less than 100kV, unless modified below, which are are used in the local sub-transmission and distribution of electric energy."
Yes
Yes
Yes
We agree with the team's conclusion to remove cranking paths from the BES definition since NERC (i.e. EOP standards) specifically address reliability matters associated with cranking paths. Although we believe item I3 (blackstart unit) is unnecessary as part of the BES Definition, we will not object to its inclusion. A blackstart unit is a facility necessary for BES restoration, but not necessarily required to be included within the BES Definition.
Yes
Yes
While we do not object to I5, we question its need based on item I2 and believe I2 also covers this item
Yes
No
We suggest striking item "ii"
Yes
Yes
Yes
FE supports the SDT's phased project approach which was well articulated in the NERC BES Definition Fact Sheet
Individual

John Bee
Exelon
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
No
Individual
Gary Carlson
Michigan Public Power Agency
Yes
The Michigan Public Power Agency (MPPA) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System (“BES”) that markedly improves both the existing definition and the SDT’s previous proposal. MPPA therefore strongly supports the new definition, although our support is conditioned on: (1) A workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. MPPA strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase “Unless modified by the lists shown below” to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., “all Transmission Elements operated at 100 kV or higher and Real Time and Reactive Power resources connected at 100 kV or higher”). (2) The exclusion for Local Distribution Facilities. As the starting point for the BES definition, MPPA supports use of the phrase “all Transmission Elements” and the qualifying sentence: “This does not include facilities used in the local distribution of electric energy.” This language helps ensure that FERC, NERC, and the Regional Entities (“REs”) will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act (“FPA”). In Section 215(a)(1), Congress unequivocally excluded “facilities used in the local distribution of electric energy” from the keystone “bulk-power system” definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – “instability, uncontrolled separation, [and] cascading failures,” 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in

local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). MPPA also believes the use of the phrase “Transmission Elements” as the starting point for the base definition is desirable because both “Transmission” and “Elements” are already defined in the NERC Glossary of Terms Used, and the term “Transmission” makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. MPPA believes this was one of the many key elements addressed by FERC in Order No. 743 and reinforced by FERC Order No. 743A and has been missing from the previous definition as well as the original definition being used since Compliance efforts commenced in June, 2007 . Because of this lack of clarity MPPA has had numerous discussions with the region regarding all 17 of our member’s connection to the TO/TOP in Michigan. Our discussions have resulted in defending 6 of our members specifically from the “Bright Line definition” path while having no tools in our tool box to substantiate our exclusion. When a small municipality with a peak load of 12.6 MW and no generation must be defended from a TO and/or TOP registration just because of its connection to it’s TO/TOP the process requires needed adjustment for clarity. This was too small to even qualify as a DP under the Statement of Compliance Registry Criteria but must have to defend itself from a TO/TOP registration issue. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria (“SCRC”) (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. A member of MPPA has been involved in a registration issue and it has a 3rd party study conducted by a nation consulting firm showing for the MISO area, generation levels of 100 MVA and 300 MVA aggregate or above are below the standard calculation mathematical significant impact criteria for static and dynamic planning protocol. MPPA recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, MPPA agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, MPPA is prepared to support the BES definition as proposed by the SDT. While MPPA strongly supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Our support for the definition is not contingent upon these changes being adopted. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Eastern Interconnection. That being said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Eastern Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, MPPA will support the SDT’s proposal. Finally, we suggest that the SDT address the circumstances when a facility is covered by both an Inclusion and an Exclusion. We note that some of the inclusions already contain language addressing this question. For example, Inclusion 1 indicates that transformers falling within the specified parameters are part of the BES “. . . unless excluded under Exclusions E1 or E3.” Where it is not already included, similar language should be included in the other Inclusions and/or Exclusions to explain whether the SDT intends the Inclusions or the Exclusions to predominate in situations where facilities might be covered by both. We suggest clarifying language in our comments to I1 and I4 below.

Yes

MPPA supports the SDT’s changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As MPPA understands it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100 kV or above, which is why the definition uses the word “and” (“the primary and secondary terminals”). We support this approach since it would exclude transformers where the secondary terminals serve distribution

loads, and which therefore function as distribution rather than transmission facilities. MPPA believes the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100 kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. There are many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. MPPA has some members who have been forced to sell of such assets in the hopes of remove the necessity for a TO/TOP registration path in this region. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

MPPA supports the changes made in Inclusion 2 and believe that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. MPPA also supports the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less due process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little due process. MPPA also believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes to include generation in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this

language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100 kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of

100 kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100 kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100 kV or above." MPPA and its members believe it is essential that regional entities and NERC recognize that "facilities used in the local distribution of electric energy" are not included in the definition of BES, regardless of the gross individual or gross aggregate nameplate rating of generation resources. While the addition of the second sentence in the core definition makes this clarification, MPPA and its members believes it is necessary that regional entities and NERC recognize that neither this Inclusion nor any of the Inclusions may be used as a basis to compel registration and compliance in such instances, regardless of the size of the generators. The statutory exemption of facilities used in the local distribution of electric energy is not limited by generator number or capacity. NERC's definitions cannot impose limitations that are not set forth in the statute. For purposes of the exclusion of facilities that might otherwise meet the definition of BES, the thresholds for determining what generating resources constitute BES facilities should be modified from the current levels (gross individual nameplate capacity of 20 MVA or gross aggregate nameplate rating of 75 MVA). MPPA and its members would support modification of the thresholds to not less than 100 MVA (gross individual capacity) and 300 MVA (gross aggregate nameplate).

Yes

Yes

MPPA supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which is discussed in more detail in our response to Question 3. This language, or some equivalent, will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a LN. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

MPPA has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Finally, MPPA believes the

appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Without such analysis either: 1) no threshold except for those connected at 100kV, or: 2) of .95 power factor of a 20 MVA generator, or 6 MVAr and use the fact that most Facility Connection Requirements require a power factor in the range of between 0.85 – 0.9 lagging to 0.9 – 0.95 leading for a generator. Hence, a 20 MVA generator (the smallest to meet the registry criteria) will need to absorb a minimum of 6 MVAr and use that as the technical justification.

Yes

MPPA and its members continue to support the radial system exclusion, which is necessary as a legal matter, because, for example, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. But we believe that further clarification is necessary. First, the deletion of "originating with an automatic interruption device" is a step in the right direction. However, "emanates from a single point of connection" could be too narrowly interpreted (i.e., multiple buses within a single substation could be viewed as multiple points of connection). MPPA and its members proposes the following modification: "emanates from a single substation connected to the BES at 100 kV or higher …". Entities whose only connection emanates from a single substation and otherwise meet the BES definition should not be denied exclusion under E1 solely because they connect to multiple buses within a single substation. Additionally, adoption of "E3- Local Networks" renders specious any argument that clams that connecting to multiple buses within a single suvstation makes a material difference for reliability purposes since local networks would have multiple connections anyway. Additionally, it is not clear why it is necessary to include the note at the end of the revised definition. ("A normally open switching device between radial systems, as depicted on prints or one-line diagrams for example, does not affect this exclusion.") This rasies questions as to what "normally open" means, and wheither the only evidence demonstrating what "normally open" means will be prints or one-line diagrams. Further, it is not entirely clear what is meant by the language "does not affect this exclusion". If the note remains, it should be modified to read something like, "a normally open switching device between radial systems does not prevent application of this exclusion." Finally, the generation threshold limit in E1(b) and E1(c) should be revised as discussed in response to Q1. Specifically, the proposed threshold of 75 MVA for this exclusion should be raised to not lessd than 300 MVA in both E1(b) and E1 (c).

Yes

MPPA and its members support the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, MPPA and its members urge the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term "Qualifying Aggregate Generation Resources" or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.

Yes

MPPA and its members strongly supports the categorical exclusion of Local Networks ("LNs") from the BES. We believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement, discussed in our response to Question 1, to exclude all facilities used in the local distribution of electric power. LNs are, of course, probably the most common form of local distribution facility. Further, the conversion of radial systems to local distribution networks should be

encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers will ultimately benefit from the path chosen by the SDT. MPPA and its members also support specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, MPPA supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to "improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system." Snohomish supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. MPPA believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a "group of contiguous transmission Elements operated at or above 100 kV" the starting point for identifying a LN would be improved by deleting the term "transmission" from this phrase. This is so because LNs are not used for transmission and the use of the term "transmission Elements" is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word "transmission" if the word is deleted and the Exclusion applies to any "group of Elements operated at 100 kV or above" that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term "transmission Elements" is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. MPPA also believes that subparagraphs (a) and (b) are redundant in the sense that whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LDN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: "The LN does not transfer energy originating outside the LN for delivery through the LN." We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: "The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN." We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term "Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is

meant by the use of the term “non-retail generation” in subparagraph (a). From context, we believe the SDT considers “non-retail generation” to mean generation that is used by retail customers located within a LN rather than being exported and sold on wholesale markets outside the LN. We therefore suggest that the SDT replace the phrase “non-retail generation” with the phrase “generation sold in wholesale markets and transmitted outside the LN.” Similarly, we are unsure what is meant by the phrase “the LN and its underlying Elements.” We believe the phrase “and its underlying Elements” could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase “the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system.” We believe this phrase more accurately reflects the SDT’s intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. Finally, MPPA believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC’s Standards Drafting Team for Project 2010-07 and its predecessor, the “GO-TO Task Force” were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as “Transmission” and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities “are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system.” White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators “would do little, if anything, to improve the reliability of the Bulk Electric System,” especially “when compared to the operation of the equipment that actually produces electricity – the generation equipment itself.” Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as “BES” simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: “Except in unusual circumstances, power flows only into the LN.”

Yes

Yes, MPPA and its members support the revised language because retail reactive devices are used to

address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.
No
MPPA and its members extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. MPPA strongly supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, MPPA is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that MPPA and its members specifically supports the changes made by the SDT in the “Effective Date” provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. MPPA supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. MPPA and its members also supports the 24-month transition period for the reasons laid out by the SDT.
Individual
Richard Malloy
Idaho Falls Power
Yes
We generally support the changes made.
Yes
We support the language as drafted.
No
Reliance upon the Registry Criteria falls back to the 20MVA threshold. We believe this threshold is very low and unnecessarily draws in small entities for which there is no impact to the BES. We understand the barriers and the volume of tenchnical evidence required for any change and we therefore have no alternative language to suggest.
Yes
We support the inclusion as drafted.
No
As drafted, it appears to draw in all generation resources that sum to 75 MVA or higher. We question then if there is value of categorizing every wind turbine on a >75MVA wind farm as a BES asset and, what would be the unintended consequences. Perhaps language delineating the point of aggregation as the demarcation point of a BES asset would better serve.
Yes
We have no comments.
Yes
We support the exclusion as drafted.
Yes
We support the exclusion as drafted.
Yes
We support the exclusion as drafted.
Yes

We have no comments.
No
Individual
Anthony Jablonski
ReliabilityFirst
No
This seems very confusing, but should be clear and easy enough for anyone to pickup, read, understand, apply and arrive at the same conclusion. The term local distribution needs to be either defined or have some guidance provided on what it is intended to cover. A suggestion for defining distribution would be that radials and local networks makeup distribution facilities. Radials usually terminate at distribution or customer substations and local networks are primarily used for distribution also. The Commission granted NERC the ability to define distribution in Order 743-A, paragraphs 67-71. It is not clear if the BES is meant to be a contiguous system or not from the language in the revised definition. ReliabilityFirst Staff believes that the BES should be contiguous, and therefore, any facilities needed to connect real and reactive resources to the BES need to be included. To maintain reliability, the BES cannot have pockets of generation that are not connected to the BES via BES facilities. ReliabilityFirst Staff believes that without including the paths from BES generators in the BES, the reliable operation of the system could be jeopardized if the paths are unavailable due to non-compliance to Reliability Standards. For example, wind farm collector systems at voltages operated at less than 100 kV should be included in the BES for the above reason.
Yes
Yes
No
Blackstart Resource is a defined NERC term, but as outlined in the definition, it could be read to include the transmission assets that also make up the resource as part of the TOP plan. Is that the intent? ReliabilityFirst Staff also feels that without including the Cranking Paths, the reliable operation of the system could be jeopardized if a restoration is required and the Cranking Paths are unavailable due to non-compliance to Reliability Standards.
No
The term “Dispersed Power Producing Resource” is not a defined term and needs further clarification. However, I4 is not needed and is already included in I2. I4 does not add any additional facilities that are not already included in I2. How are “dispersed power producing resources” different from “generating resources” described in I2? If the intent of I4 is to include wind generators but exclude wind farm collector systems in the BES, ReliabilityFirst Staff disagrees. To maintain reliability, the BES cannot have pockets of generation that are not connected to the BES via BES facilities. ReliabilityFirst Staff believes that without including the paths from BES generators in the BES, the reliable operation of the system could be jeopardized if the paths are unavailable due to non-compliance to Reliability Standards. For example, wind farm collector systems at voltages operated at less than 100 kV should be included in the BES for the above reason. I4 could be deleted.
Yes
No
The term radial must be specifically defined in this application. ReliabilityFirst Staff believes this to mean a true radial in the sense that an adverse impact by the radial facilities does NOT affect or impact BES facilities. In the first sentence the word “Element” is capitalized but “transmission” is not, we believe both terms should be capitalized. The phrase “single point of connection” should have guidance so that everyone reading this definition reads the single point of interconnection the same. Some have read this phrase to be a single substation, while others have read this phrase to be one and only one line or supply (i.e. interconnection point), which is it? The “Note” we disagree with. In any and all cases if there is any operation or use of the BES, the facilities should be included. By the wording of this exclusion, one cannot determine if taps (sections of line from a BES transmission line

to a single substation) are intended to be included in the BES or not. More specifically, where does the radial facility begin and the BES end? This determination was clearer in the previous version of the definition with the use of the language "…originating with an automatic interruption device…".
No
It is not clear why "ii" is needed. If the net generation exceeds 75 MVA, then it is included in the BES whether or not there are ancillary services provided for that generation. Would customer owned generation less than a net of 75 MVA but greater than 20 MVA be included in the BES if item ii was not met?
No
ReliabilityFirst Staff proposes to use the LN exclusion as part of the definition of what elements make up the facilities used in the local "distribution" of electric energy and could be included in the Exception Process as a criterion for exclusion.
Yes
Yes
This definition needs to be clear and easy enough for anyone to pickup, read, understand, apply and arrive at the same conclusion on whether the facility or element is included or excluded. This definition leaves room for continued debate and interpretation. To help make this definition clearer, ReliabilityFirst Staff has provided a redline version of the core definition under a separate cover (file titled "Bulk Electric System definition by RFC Staff 10-4-2011").
Group
David Taylor
NERC
No
The sentence, "This does not include facilities used in the local distribution of electricity," is a commentary or statement of objective rather than a definition of what facilities comprise the BES. Including such information that does not define the facilities to be included or excluded will be a source of confusion in applying the definition. The BES definition as proposed by the SDT may in fact include such facilities and as stated in paragraph 37 of Order 743: "Determining where the line between "transmission" and "local distribution" lies, which includes an inquiry into which lower voltage "transmission" facilities are necessary to operate the interconnected transmission system, should be part of the exemption process the ERO develops." If the drafting team believes that Exclusions E1 through E4 in the definition are sufficient to not include any facilities used in the local distribution of electricity then those exclusions, and not the aforementioned sentence in the "core definition," define the facilities that are not included (i.e., the sentence is unnecessary).
Yes
Yes
The drafting team's proposed approach for Inclusion I2 (generation), including the reference to the ERO Statement of Compliance Registry Criteria, is generally acceptable given the scope of this project and the breaking of the project into two phases. Thresholds for generator MVA rating and interconnection voltage should be considered in the second phase of this project.
No
The cranking path(s) identified in the Transmission Operator's restoration plan should be included in the BES definition.
Yes
Yes
No
While we appreciate the improvement in the text for Exclusion E1, but we continue to believe that E1 should require (i) the normally open switch must not be used to make a parallel connection if the normally switch is operated at 100 kV or higher and (ii) an automatic interrupting device that is part

of the BES must be provided at the point of interconnection between the radial system and the BES.
Yes
No
While we appreciate the improvement in the text of Exclusion E3, but we continue to believe that E3 should require automatic interrupting devices that are part of the BES must be provided at the points of interconnection between the Local Network and the BES.
Yes
No
Individual
Colin Anderson
Ontario Power Generation Inc.
No
OPG continues to question the need for the changes required (and costs imposed) as a result of this new definition. This is particularly true in the NPCC region where an impact based methodology is being used to determine the set of BES elements. A very clear 100kV bright line, as proposed in this draft, will dramatically increase the list of generation elements that must meet reliability standards, without a corresponding increase in wide-area reliability. OPG recommends that the work planned for phase II, technical justification of the generation and voltage thresholds, should be completed before implementing the new definition of BES.
Yes
No
OPG does not agree that the question of the 20 MVA (single) versus 75 MVA (aggregate) threshold should be deferred until a subsequent phase of the standard development process ("Phase II"). This question should be resolved now. In general, key elements of the development process should not be parsed out into multiple phases, in hopes that "Standard Development Fatigue" will eliminate critics of the approach. Further, selecting the generator terminals as the boundary for BES within the generating station means that the Isolated Phase Bus (IPB), which connects the generator terminals to the Low Voltage (LV) terminals of the generator step-up (GSU) transformer, is now included as a BES element. The IPB is operated at low voltage, no more than 22kV, so including it as a BES element is going beyond the FERC order 743 and 743a. OPG strongly recommends that the BES boundary be moved to the LV terminals of the GSU transformer.
No
To assure availability of the generation blackstart resources identified in the Transmission Operator's Power System Restoration Plan the generators are tested according to the requirements of reliability standard EOP-009. Blackstart resources are only required post LOBES (Loss of Bulk Electric System) and in many cases do not contribute to the reliability of the BES under normal operating conditions. OPG recommends that this inclusion be removed from the new definition of BES.
Yes
No
OPG recommends that the wording of this inclusion be made clear that the BES boundary extends to the Low Voltage terminals of the transformer, used in the interface connection, and does not include the static or dynamic reactive power source itself unless it is directly connected to the BES.
No
Non-retail generation needs to be properly defined in the text of the exclusion.
Yes
No

Non-retail generation needs to be properly defined in the text of the exclusion.
Yes
Yes
Further to comments submitted in Question #1, OPG disagrees in general with proceeding to implement a 100 kV brightline definition in the absence of a properly quantified cost/benefit analysis. Entities are being asked to incur a high cost for no demonstrated benefit in wide-area reliability.
Group
Guy Zito
Northeast Power Coordinating Council
Yes
No
More specific description is needed for the equipment intended to be included in I1. For example, is it intended to include autotransformers, PARs, primary, secondary, tertiary windings, etc.? There will be difficulty applying the definition to facilities without this detail. Suggest rewording to: All transformers (including auto-transformers, voltage regulators, and phase angle regulators and all windings) with primary and secondary terminals operated at or above 100kV, and generator step-up (GSU) transformers with one terminal operated at or above 100KV, unless excluded by E1 or E3.
No
In deference to direction given to the Drafting Team, Inclusion I2 should remove the reference to the Statement of Compliance Registry Criteria. The current language induces circular arguments without a true governing document. The definition should drive what appears in the registration criteria. I2 should be revised to read: “Generating resources with a gross nameplate rating of 20MVA or greater, or generating plant/facility connected at a common bus, with an aggregate nameplate rating of 75MVA or greater and is directly connected to a BES Element.” This is consistent with the proposed I2 and the current Compliance Registry Criteria. Ultimately the definition should be the governing document and provide the details of what generation should be included. It is understood that Phase 2 of this project will address this.
No
Eliminating I3 should be considered based on the availability and performance expectations of black start resources being ensured by existing standards, and unless they meet the BES definition under the I2 inclusion they do not have any reliability impact on BES operation. If I3 is retained, suggest rewording Inclusion I3 to read as follows: Black start resources material to and designated as part of the Transmission Operator’s restoration plan.
No
Suggest the term “common point” needs clarification and/or definition (is risk of single mode failure intended, i.e. where all the resources could be lost for a single event?). Suggest the following wording: “connected at a common point through a dedicated step-up transformer with a high-side voltage of 100 KV or above.” Dispersed power producing sources such as wind and solar should not be included as BES elements because of the variable and intermittent nature of these resources. If these dispersed power producing resources had dedicated energy storage facilities only then that could make them BES elements. Generally the collector systems for these resources (from the bulk transmission system reliability perspective) do not differ from distribution systems which are excluded from the BES.
No
Technical studies need to be conducted to confirm reactive resource impacts on the reliability of the BES. The inclusion of reactive resources is a significant expansion of the current BES definition and therefore requires technical justification for inclusion. Inclusion I5 as written is confusing with a reference to Inclusion I1 in the definition. Suggest removing references to reactive resources from Phase 1 until technical justification can be demonstrated (as part of Phase 2).
No
E1 can be simplified by not dividing in three subsets of a, b and c. The end result is that a Radial system is excluded if it does not have more than 75 MVA aggregate non-retail generation. There

seems to be an error with reference to I3. Black start unit paths are not designated as BES and were taken out in this version under I3 so E1 and E3 should not reference I3. This contradicts the radial or LN exclusion from I3. Suggest deleting the reference to I3 in E1 and E3 because this reference is in contradiction to I3. I3 does not require a path to be BES, but it implied that a radial cannot be excluded if there is a black start unit on the radial. Further clarification is needed to the language in the Note referring to the "Normally Open switch". The E1 reference Note should be re-worded to state "Radial systems shall be assessed with all normally open switching devices in their open positions." Explanatory figures should be included to illustrate the system configurations addressed. Black start unit paths must be considered in the construction of E1. In E1c, what is meant by "non-retail"?
No
Why are references to Balancing Authority, Generator Owner, and Generator Operator included in E2 which is part of the BES definition? The wording of Exclusion E2 should be consistent with the Statement of Compliance Registry Criteria in Section III.c.4.
No
What is the technical justification for 300kv and higher? Local Network is capitalized (network not capitalized at the beginning of E3) throughout E3, yet it is not defined in the NERC Glossary. The installed generation limit in a Local Network should be addressed in Phase 2. Any studies supporting E3 should be made available.
No
Consider using other wording to replace "retail". The statement "owned or operated by the retail customer" is confusing and arguably inaccurate and should be revised. Refer to comments related to reactive resources for Question 6 regarding Inclusion I5. Retail and non-retail generation should be defined.
Yes
Technical bases have not been provided for the proposed definition of the BES. Additionally, the cost impacts have not been assessed and weighed against the potential benefits of this proposal. There is confusion arising from the construction and interactions of the Inclusion, and Exclusion sections. System diagrams, put in a separate guidance document, would help in understanding. The situation of using Exceptions to understand Exclusions must be avoided. Suggest consider incorporating Inclusions directly, and leave the Exclusions as is format wise. The Implementation period discusses a 24 month timeframe(the Order suggests 18) from when the standard becomes effective to begin Compliance obligations. If construction is required to become compliant or meet performance requirements with standards, or CIP Version 5 standards increase the amount of BES assets this will be insufficient when considering budgeting, designing, siting requirements, and permitting. Concern exists over the paradigm that the definition should "mirror" the NERC Compliance Registry Criteria regarding who is registered. Some RSC members believe the definition should drive any changes to the registry criteria and not the criteria perpetuating the thresholds in the definition. However, there is a need to confirm that Phase 2 of this project will address this. The Inclusions and Exclusions listed need clarifications and perhaps diagrams and accompanying guidelines to clarify and explain the intent.
Individual
Thomas C. Duffy
Central Hudson Gas & Electric Corporation
Yes
Yes
Yes
Yes
Yes

Yes
Yes
Yes
No
Under the proposed definition, clause E3.b. stipulates that ‘power only flows into the Local Network (LN): The LN does not transfer energy originating outside the LN for delivery through the LN.’ Clearly, this is a bright line. The Local Network Exclusion document, however, describes that ‘power flow “shifts”’ of ‘negligible fraction’ are acceptable. Further, the document acknowledges that parallel flows through the LN, ‘as governed by the fundamentals of parallel circuits’ will occur. Finally, the document goes on to exhibit that flows through the LN, however minimal, will result from both power transfer distribution factor (PTDF) and line outage distribution factor (LODF) analysis. If this is the case, what bright line criterion should be applied for this Exclusion Principal if no maximum PTDF and/or LODF are specified?
Yes
Yes
Due to the movement to a phased BES definition development process and assuming the definition is approved as proposed, there is an urgent need for NERC to provide clear guidance to Registered Entities regarding how to proceed with facilities and address changes to the NERC Compliance Registry registration obligations brought in/on by the application of the new definition. The problem stems from a likely scenario whereby the affected Registered Entities may be faced with an Implementation Plan and an Exception Request Procedure which must be completed prior to the completion of the Phase II definition development process. If that is the case, many Registered Entities will be confronted with either (1) spending large amounts of human and financial resources, not yet acquired, to address facilities/procedures necessary to address possible new compliance obligations only to find their efforts rendered unnecessary by the results produced in Phase II or, (2) waiting until the results of Phase II are provided and risking being found non-compliant and subject to substantial penalties in the future. Neither option can be viewed as a desirable, or for that matter, an acceptable position to be placed in.
Group
Charles Long
Entergy Services, Inc.
Yes
Yes
Yes
We are concerned that the generator MVA limits are too low and strongly support addressing this issue in Phase 2 of this project.
Yes
Yes
Yes
Yes
The SDT needs to clarify what is meant by "non-retail generation." Is this what is commonly referred to as "customer owned" or "behind-the-meter" generation?
Yes

Yes
The term "non-retail generation" in E3a should be changed to simply "generation."
Yes
No
The comments expressed herein represent a consensus of the views of the above-named members of the SERC EC Planning Standards Subcommittee only and should not be construed as the position of SERC Reliability Corporation, its board, or its officers"
Individual
Manny Robledo
City of Anaheim
No
The City of Anaheim recommends either changing the E1 (b) language back to that of the previous BES definition draft, i.e. 75 MVA or above connected at 100 kV or above, or limit the amount of generation allowed within a Radial Element or Local Network to 300 MVA or less, which is the amount of uncontrolled load loss that constitutes a reportable "disturbance" pursuant to EOP-004 and DOE Form OE-417. If DOE and NERC do not consider a 300 MW uncontrolled loss of load a reportable event, then why would the potential loss of a 75 MVA of non-critical generator connected at 69 kV make a Radial Element or Local Network critical to the reliability of the BES? The current ERO Statement of Compliance Criteria does not require GO/GOP registration for generation connected below 100 kV as long as it's not critical to the reliability of the BES, i.e. black start, etc., even if the amount of generation is greater than 75 MVA. There is good reason for this because the mere loss of 75 MVA generator would not affect the reliability of a system as big as the Western Interconnection, at all, and a fault at say 69 kV would have sufficient impedance not to affect the BES from an electrical perspective.
Yes
Yes
Yes
Yes
This is OK because the 75 MVA is connected at 100 kV or above.
Yes
No
The City of Anaheim recommends either changing the E1 (b) language back to that of the previous BES definition draft, i.e. 75 MVA or above connected at 100 kV or above, or limit the amount of generation allowed within a Radial Element or Local Network to 300 MVA or less, which is the amount of uncontrolled load loss that constitutes a reportable "disturbance" pursuant to EOP-004 and DOE Form OE-417. If DOE and NERC do not consider a 300 MW uncontrolled loss of load a reportable event, then why would the potential loss of a 75 MVA of non-critical generator connected at 69 kV make a Radial Element or Local Network critical to the reliability of the BES? The current ERO Statement of Compliance Criteria does not require GO/GOP registration for generation connected below 100 kV as long as it's not critical to the reliability of the BES, i.e. black start, etc., even if the amount of generation is greater than 75 MVA. There is good reason for this because the mere loss of 75 MVA generator would not affect the reliability of a system as big as the Western Interconnection, at all, and a fault at say 69 kV would have sufficient impedance not to affect the BES from an electrical perspective.
No
Again, 75 MVA should be increased to 300 MVA in E2 for the reasons stated in response to Question 7.

No
Again, 75 MVA should be increased to 300 MVA in E2 for the reasons stated in response to Question 7.
Yes
No
Individual
Deborah J Chance
Chevron U.S.A. Inc.
Yes
Yes. Very good progress was made in the process. The initial overly broad language was inadvertently including parties that are not necessary to meet the NERC and FERC goals. The current language has clarified some of the ambiguities.
Yes
No
It is not logical to allow an aggregate of 75 MVA at a single site for multiple generators while maintaining 20 MVA for a single generator. Further, if a party exceeds export of 75 MVA to meet an emergency condition on the grid, it should not be a triggering event for BES definition. Parties should be concerned with keeping the grid operational rather than the adverse effect of exceeding 75 MVA.
Yes
Yes
Yes
Yes
This is very important exclusion for an entity operating in remote areas of the country that provides distribution service to third parties where utilities are unable or unwilling to serve. While the distribution is at a low voltage, the power was initially received by the operating entity at a high voltage.
Yes
This is a very important exclusion for Combined Heat and Power facilities that utilize large amounts of steam and power, and secure and/or provide their own operating reserves.
Yes
This provision complements E1 in defining the difference between distribution and transmission
Yes
No
Individual
Alice Ireland
Xcel Energy
In general, Xcel Energy supports the changes to the core definition of Bulk Electric System. Some additional clarification may be required as suggested below under the individual Inclusions or Exclusions.

No
Xcel Energy believes that this inclusion is still a little vague and could use some clarification. For instance, if a wind farm has an aggregated capacity greater than 75 MVA (and therefore meets Inclusion I4) exactly what facilities are included as part of the BES, every turbine, all distribution transformers and cables, etc. If all equipment is included, what level of detail is required of this BES facility for modeling purposes, and who is responsible for modeling this system. Or, is the intent to only include the facilities at the common point of connection, whereby the facility could be modeled as 1 large facility?
No
Xcel Energy believes that some more definition is required to clarify the intent of the note under Exclusion E1 related to normal open switching device. A direct statement would remove any ambiguity, such as “a normally open switch in a system that could be interconnected or experience loop flows will be considered (BES/non BES)”.
Individual
Edwin Tso
Metropolitan Water District of Southern California
Yes
Metropolitan Water District of Southern California (“MWDSC”) generally supports the core definition of the Bulk Electric System as proposed. However, some of the proposed Inclusions and Exclusions need to be clarified as identified in questionnaires #6 and #10 below.
Yes
Yes
Yes
Yes
No
Inclusion 5 should be changed to be consistent with the core definition and to clarify Reactive Power devices. Under I5, the additional phrase "or through a dedicated transformer with a high side voltage of 100 kV or higher," appears to conflict with the core definition's phrase "and Real Power and Reactive Power resources connected at 100 kV or higher". For example, if you have a device connected to a 69Kv system which is used solely for an end-user's load, but the 69kv system is transformed up to a 115kV system, such device could be included as BES or you would have to define what is meant by "dedicated. If Reactive Power is meant to agree with the definition under NERC's Glossary of Terms, there should be consistency and less verbiage. MWDSC also agrees with WECC's comment that there should be some minimum threshold for Reactive Power devices similar to that identified for generating resources in Inclusion 2. MWDSC recommends that Inclusion 5 be changed as follows: I5 - "Reactive Power devices dedicated to support the BES that are connected at 100kV or higher, or through a transformer that is designated in Inclusion I1."
Yes
Yes
Yes

No
Exclusion 4 appears to limit the devices just to retail customers. However, any end-user load, including wholesale or retail, should be included. NERC's Glossary of Terms uses the phrase "end-use customer", not retail customers to describe loads. MWDSC recommends that Exclusion 4 be changed as follows: E4 - Reactive Power devices owned and operated by an end-use customer solely for its own use.
No
Individual
Greg Rowland
Duke Energy
Yes
No
For clarity regarding 3 and 4 winding transformers, it should say “primary and at least one secondary terminal operated at 100 kV or higher.
Yes
Yes
Yes
No
Need to add the exception for exclusions under E1 or E3, and also reword to exclude devices connected to a transformer winding less than 100 kV unless that is the only connection to that winding. Suggested rewording of I5 : “Unless excluded under Exclusions E1 or E3, static or dynamic devices dedicated to supplying or absorbing Reactive Power that are connected at 100 kV or higher, or through a dedicated transformer with a high-side voltage or 100 kV or higher, or through a transformer winding less than 100 kV that is designated in Inclusion I1 if the winding does not have any circuits or load connected to it.” This would eliminate having to include a capacitor connected to the 69 kV winding of a three winding BES transformer such as 230/138/69 kV if that winding had other connections such as 69 kV circuits. The voltage threshold of 100 kV and above should capture devices connected to 100 kV or higher windings of transformers designated in Inclusion I1.
Yes
Yes
Yes
Yes
No
Individual
David Proebstel
Clallam County PUD No.1
Yes
The Public Utility District No. 1 of Clallam County (“CLPD”) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System (“BES”) that markedly improves both the existing definition and the SDT’s previous proposal. CLPD therefore strongly supports the new definition, although our support is conditioned on: (1) a workable

Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. CLPD strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase “Unless modified by the lists shown below” to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., “all Transmission Elements operated at 100 kV or higher and Real Time and Reactive Power resources connected at 100 kV or higher”) and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for Local Distribution Facilities. As the starting point for the BES definition, CLPD supports use of the phrase “all Transmission Elements” and the qualifying sentence: “This does not include facilities used in the local distribution of electric energy.” This language helps ensure that FERC, NERC, and the Regional Entities (“REs”) will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act (“FPA”). In Section 215(a)(1), Congress unequivocally excluded “facilities used in the local distribution of electric energy” from the keystone “bulk-power system” definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – “instability, uncontrolled separation, [and] cascading failures,” 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). For similar reasons, Clallam believes use of the phrase “Transmission Elements” as the starting point for the base definition is desirable because both “Transmission” and “Elements” are already defined in the NERC Glossary of Terms Used, and the term “Transmission” makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria (“SCRC”) (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. Clallam recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, Clallam agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process.As long as Phase II proceeds expeditiously, Clallam is prepared to support the BES definition as proposed by the SDT. While Clallam strongly supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Our support for the definition is not contingent upon these changes being adopted. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our II proceeds expeditiously, Clallam is prepared to support the BES definition as proposed by the SDT. While Clallam strongly supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Our support for the definition is not contingent upon these changes being adopted. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, Clallam believes a 200-kV threshold would be more appropriate for WECC than a 100-kV threshold. In addition, a 200-kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no

technical analysis to support this view is therefore incorrect. That being said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, Clallam will support the SDT's proposal and will not further pursue its claims regarding the 200-kV threshold.

Yes

We support the SDT's changes to the first Inclusionbecause it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100 kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100 kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

CLPD supports the changes made in Inclusion 2 and believe that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support that aspect of the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach becauseif the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less due process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established,

they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little due process. CLPD believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100 kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating unitsthat are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance RegistryCriteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability

Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100 kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100 kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100 kV or above."

Yes

CLPD supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

CLPD supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which is discussed in more detail in our response to Question 3. This language, or some equivalent, will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a LN. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

CLPD has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity

threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Finally, CLPD believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process.

Yes

CLPD continues to support the radial system exclusion, which is necessary as a legal matter, because, for example, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term “transmission Elements” in the initial paragraph should be changed to “Elements.” Radial systems are not transmission systems and including the word “transmission” in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to“generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)”). We urge the SDT to replace this language with the defined term “Qualifying Aggregate Generation Resources,” discussed in more detail in our response to Question 3. This language, or some equivalent, will preserve the SDT’s ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC’s Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The “Note” as drafted by the SDT indicates that “a normally open switching device between radial systems” will not serve to disqualify the Radial from exclusion under Exclusion 1. As noted above, CLPD strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a “note” suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and properly identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.

Yes

CLPD supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, CLPD urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term “Qualifying Aggregate Generation Resources” or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System

or LN.
Yes
CLPD strongly supports the categorical exclusion of Local Networks (“LNs”) from the BES. We believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement, discussed in our response to Question 1, to exclude all facilities used in the local distribution of electric power. LNs are, of course, probably the most common form of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers will ultimately benefit from the path chosen by the SDT. CLPD also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, CLPD supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to “improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system.” Clallam supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. CLPD believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a “group of contiguous transmission Elements operated at or above 100 kV” the starting point for identifying a LN would be improved by deleting the term “transmission” from this phrase. This is so because LNs are not used for transmission and the use of the term “transmission Elements” is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word “transmission” if the word is deleted and the Exclusion applies to any “group of Elements operated at 100 kV or above” that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term “transmission Elements” is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. CLPD also believesthat subparagraphs (a) and (b) are redundant in the sense that whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LDN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: “The LN does not transfer energy originating outside the LN for delivery through the LN.” We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: “The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN.” We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another

way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term "Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is meant by the use of the term "non-retail generation" in subparagraph (a). From context, we believe the SDT considers "non-retail generation" to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer's own load. We therefore suggest that the SDT replace the term "non-retail generation" with "generation located behind the retail customer's meter." Similarly, we are unsure what is meant by the phrase "the LN and its underlying Elements." We believe the phrase "and its underlying Elements" could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase "the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system." We believe this phrase more accurately reflects the SDT's intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. Finally, CLPD believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Teamconcluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the

assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: “Except in unusual circumstances, power flows only into the LN.”
Yes
Yes, CLPD supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.
No
CLPD extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. CLPD strongly supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, CLPD is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that CLPD specifically supports the changes made by the SDT in the “Effective Date” provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. CLPD supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. CLPD also supports the 24-month transition period for the reasons laid out by the SDT.
Individual
Richard Salgo
NV Energy
Yes
The core definition is simpler than the prior version. We support the addition of the last sentence regarding the exclusion of facilities used in the local distribution of electric energy.
Yes
The changes made to I1 (Transformers) appropriately resolves several of the industry concerns about three-winding transformers as well as an inadvertent use of the word “and” rather than “or”.
No
While we do not agree with making specific reference and linkage to the generator thresholds of the SCRC, it is understood that a timely justification of any alternative threshold was not possible. It is of paramount importance that the subject of generation thresholds be addressed in subsequent development of this Definition. We are of the opinion that generation ought to be considered as a “user” of the BES, not necessarily a part of the BES, similar in concept to the way Load uses the BES. Using this concept, the BES would be restricted to the “wires” type facilities. Standards would nevertheless be applicable to generators that use the BES, so no gap in reliability would exist.
Yes
Yes
Yes
The SDT has appropriately captured the necessary inclusion of high voltage transmission reactive

resources.
Yes
There may be an opportunity to consolidate the sub-items of E1 into a single inclusion statement in order to simplify this exclusion designation. We propose the following replacement option: “E1 - Radial systems: A group of contiguous transmission Elements that emanates from a single point of connection of 100 kV or higher and serves any combination of load and/or generation, provided that the generation resources are not identified in Inclusion I3 and do not have an aggregate capacity of non-retail generation greater than 75 MVA (gross nameplate rating).”
Yes
Yes
Yes
No
Group
Ian Grant
Tennessee Valley Authority
Yes
TVA agrees to the clarifying changes to the core definition in general; however, we maintain that 200kV and above is the correct bright line for the Bulk Electric System, and requests that the Phase 2 for the project use 200kV and above or develop a transmission voltage and/or an MVA threshold that is technically based.
Yes
TVA agrees in general with the revisions to the specific inclusions for transformers in I1; however, we believe the low side transformer voltage level should be 200kV or above, and requests that the Phase 2 for the project use 200kV and above or develop a transmission voltage and/or an MVA threshold that is technically based.
Yes
TVA agrees in general with the revisions to I2 for generation; however, we maintain that 200kV and above is the correct bright line for generation connected to the Bulk Electric System, and requests that the Phase 2 for the project use 200kV and above or develop a transmission voltage and/or an MVA threshold that is technically based.
No
TVA agrees with the changes but believe clarity would be added by changing the word “identified” to “designated”.
Yes
No
TVA feels that this inclusion should be limited to dynamic devices with an aggregate capacity greater than 75 MVAR (gross aggregate nameplate rating) connected through a common point at a voltage of 200kV or above, and requests that the Phase 2 for the project use 75 MVAR connected at 200kV or above or develop a transmission voltage and/or an MVAR threshold that is technically based.
Yes
TVA suggests the wording “non-retail generation’ should be clarified with an explanation of why it is used in this exclusion.
No
Clarification needs to be provided for what is meant by E2 (ii), regarding generation on the customer’s side of the retail meter; otherwise we have trouble developing a position on this question.
No
TVA would agree with the exclusion if the wording of the exclusion includes the following phrase (in

italics) added at the end of E3 b): “Power flows only into the LN: The LN does not transfer energy originating outside the LN for delivery through the LN under normal operating conditions; and”
Yes
Yes
The definition of the BES is referenced in several existing standards and the Statement of Compliance Registry Criteria. TVA is concerned with this revised definition’s impact on entity registrations, i.e., how will the revised definition be integrated into the Compliance Registry Criteria. The implementation plan should include how the integration is going to occur. The 24 month period for new facilities that are to become BES elements as a result of this definition is very important to successful implementation of the definition. An period shorter that 24 months would be very problematic for the industry.
Individual
Jerome Murray
Oregon Public Utility Commission Staff
No
Reference to NERC Statement of Compliance Registry Criteria (SCRC) needs to be eliminated from the BES Definition. This circularity must be eliminated. Proposed revised language is: “I2 - Generating resource(s) with a gross individual nameplate rating greater than 20 MVA or with a gross aggregate nameplate rating greater than 75 MVA including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100 kV or above.”
Yes
Yes
Yes
Individual
Mary Jo Cooper
Z Global Engineering and Energy Solutions
Yes
We support these changes however feel that further clarification needs to be made regarding the E1 Note. This note currently states "Note – A normally open switching device between radial systems, as depicted on prints or one-line diagrams for example, does not affect this exclusion" This note is not clear. We recommend that the note is rewritten to be clear that a normally open switching device should not be viewed as normally closed as the regions are currently doing. Possible language: "Note: A normally open switching device between radial systems, as depicted on prints or oneline diagrams, for example, does not classify the two or more radial lines as a loop line. The exclusion will still apply.”}"
Yes
Yes
Yes

Yes
Yes
Yes
As stated in comment one. I recommend the Note is rewritten: "Note – A normally open switching device between radial systems, as depicted on prints or oneline diagrams, for example, does not classify the two or more radial lines as a loop line. The exclusion will still apply."
Yes
Yes
Yes
No
Individual
Eric Salsbury
Consumers Energy
Yes
Yes
Yes
Yes
Yes
We agree, but would like further clarification on what wind farm equipment (e.g., collector systems or other equipment) would be considered a part of the BES. Is the system designed for aggregating capacity considered to be part of the dispersed plant or part of the BES.
No
This inclusion appears to pull small generators that have an AVR that are connected to 138 kV into the BES. These generators are primarily intended to provide real power.
No
In general we agree, but believe the word "transmission" should be removed from "A group of contiguous transmission Elements…"
Yes
No
In general we agree, but believe the word "transmission" should be removed from "A group of contiguous transmission Elements…"
Yes
No
Individual
Tracy Richardson

Springfield Utility Board
Yes
SUB particularly agrees with the addition of, “This does not include facilities used in the local distribution of electric energy.” to the BES draft definition.
Yes
SUB supports and appreciates the change in language from, “unless excluded under Exclusions E1 and E3” to “Exclusion E1 or E3”. This makes it clear that Radial System or Local Network transformers should not be considered BES facilities, regardless of operating voltage.
No SUB comment as this is not currently applicable to SUB's operations.
No SUB comment as this is not currently applicable to SUB's operations.
No SUB comment as this is not currently applicable to SUB's operations.
Yes
SUB agrees in general, but does not agree that ALL reactive resources should be automatically included in the BES Definition. For example, is a local network (100 kV or above), which is otherwise excluded, but has a reactive device used for power factor correction (100 kV or above), still excluded? There are a significant number of reactive resources that are used to serve systems that provide service primarily to load, with either no or a minimal amount of generation. If this section is included, the Exclusion language needs to be modified to exclude those reactive resources from the BES that are radial serving only load or local networks that serve load (with less than 75MVa of generation). SUB does not agree with the language referring to only those “retail customer” reactive power devices for Exclusion E.4. This is too narrow and does not accurately reflect the use of reactive power devices installed by registered entities when retail customers do not “fix” their reactive power issues on their own. SUB recommends that the language in I5 and E4 be consistent, and that “retail customer” should include Registered Entities as well as end users. This present language is overly broad and, absent modifications to the BES definition, will generate a significant amount of paperwork. SUB suggests the following language change: I5 –Static or dynamic devices dedicated to supplying or absorbing Reactive Power that: a)are connected at 100 kV or higher and are not part of a radial system or area network that are excluded from the BES, or; b)are connected through a dedicated transformer with a high-side voltage of 100 kV or higher and are not part of a radial system or area network that are excluded from the BES, or; c)are connected through a transformer that is designated in Inclusion I1 and are not part of a radial system or area network that are excluded from the BES .
Yes
SUB supports a radial system exclusion.
No SUB comments as this is not currently applicable to SUB's operations.
Yes
SUB strongly supports the exclusion of Local Networks from the BES. SUB particularly agrees with the addition of, “LN’s emanate from multiple points of connection at 100 kV or higher to improve the level of service to customer Load and not to accommodate bulk power transfer across the interconnected system.” language to the draft E3 Exclusion, as well as the LN characterization being more clearly defined. SUB is concerned that the E3 Exclusion does not specify that these power flows would be “under normal operating conditions” and specify if all power flow is considered. SUB recommends that unscheduled power flow should not be considered, but that it is applicable only to scheduled power flow. While SUB supports the exclusion of LNs from the BES, we believe there is additional work that needs to done regarding the Local Network Exclusion Technical Justification. Without specific parameters, determining inclusions and exclusions will be left to the discretion of too many. This will create ambiguity and inconsistency of application.
Yes
Reactive power devices used to serve radial networks or Local Networks are often owned and operated by the registered entity (not the “retail customer”) to address Area Network – wide reactive power issues. This language should read: “E4. Reactive power devices that are within a radial system excluded under E1 or within a local network excluded under E3” If the current draft language is left as it is, there will likely be a lot of unnecessary paperwork to exclude reactive power devices within radial system or local networks from the BES through the exclusion process. SUB suggests that the language in the E4 Exclusion be consistent with that in the I5 Inclusion.

Yes
When submitting BES Definition comments, SUB would suggest a “not-applicable”, “no-impact” or “abstain” option in addition to “yes” or “no”. In some cases, the draft language has no impact on an entity’s system, yet that entity’s selection of “yes” or “no” may imply agreement or disagreement rather than expressing lack of applicability. This could skew the perception of agreement or disagreement, and create a potential issue for those who are directly impacted by the changes.
Individual
Kerry Wiedrich
Mission Valley Power
Yes
Mission Valley Power - We agree with the changes. We must point out that the overall flow, or how one proceeds through the inclusions and exclusions is not clear. Can an item that meets an inclusion be subsequently excluded? If so, this needs to be explicitly stated. So far, we only have the flow chart produced by the ROP team that indicates otherwise (http://www.nerc.com/docs/standards/sar/20110428_BES_Flowcharts.pdf). This was made evident by the question at the 9/28 webinar regarding an I5 capacitor on an E3 local network. The questioner thought the capacitor was BES per I5, but the answer was that it was excluded per E3. We can find no support for the answer given. The listing of specific exclusions within I1 (exception proves the rule) argues for questioner’s stance that the capacitor is BES as written. Also, if included items could subsequently be excluded, they would be no different from any other item that met the voltage threshold of 100kV. There would be no need for any of the inclusions if all possible outputs from the inclusion tests go to the same exclusion test inputs. We strongly support the addition of the language regarding local distribution facilities, as it matches congressional intent to leave the regulation of these facilities to state and local authorities.
Yes
Mission Valley Power - Comments: Mission Valley Power strongly agrees with this inclusion as written. It is consistent with the recent PRC-004 and PRC-005 interpretation and the NERC definition of Transmission. We believe the recent changes to this inclusion add clarity.
No
Mission Valley Power - Referencing the Criteria which in turn references the BES definition creates a circular definition. Mission Valley Power encourages the adoption of specific thresholds that are technically justified. We also note that the Criteria and its revisions do not go through the standards development process, so that thresholds may change with little warning and without triggering an implementation plan for facilities that may be swept into the BES as a result.
Yes
Mission Valley Power - We agree with the removal of the voltage language, since the inclusions and exclusions apply only to equipment over 100 kV.
Yes
Mission Valley Power agrees both with the inclusion and with the revised language. The revised language removes the need to provide a separate definition for “Collector System”.
No
Mission Valley Power - While we agree that reactive devices of sizable capacity connected at 100 kV or higher are needed for BES reliability, Mission Valley Power fails to see why this inclusion is needed as they are already captured by the 100 kV threshold. We would propose instead to eliminate this inclusion and substitute an exclusion for smaller capacity devices. If the SDT really believes an inclusion for reactive devices is needed, we suggest the SDT provide a technically justified capacity limit within the inclusion. In addition we suggest also including the phrase “…unless excluded under Exclusion E1, E2 or E4” similar to that in I1. Please see the answer to Q1 above Q10 below.
No
Mission Valley Power notes that a new term has been introduced, “non-retail generation,” with no definition provided. The answer to the question on this during the 9/28 webinar indicated that non-retail generation was behind the retail customer’s meter. We can see no reason why the net-metered PV systems should count toward the aggregate limit (exceeding the limit means no exclusion) while a non-blackstart thermal plant doesn’t (the radial system is excluded if any amount of load is present).

We have also heard the SDT meant just the opposite of what was stated in the webinar. We ask that a reasonable definition for non-retail be provided within the BES definition document. We strongly agree that radial systems should be excluded and that the presence of normally open switching devices between radial systems should not cause them to be considered non-radial. Such a result would cause the removal of these devices to the detriment of the local level of service. We note that the singular “A normally open switching device” is used and suggest that an allowance be made for the possibility of multiple devices. “Normally open switching devices…”
Yes
No
Mission Valley Power - : We strongly agree that local networks should be excluded, since they act much like the radial systems excluded in E1 while providing a higher level of service to customers. These networks should not be discouraged in the name of reliability. We again object to the introduction of the new confusing term “non-retail generation” with no definition provided.
No
Mission Valley Power - : We strongly agree that local networks should be excluded, since they act much like the radial systems excluded in E1 while providing a higher level of service to customers. These networks should not be discouraged in the name of reliability. We again object to the introduction of the new confusing term “non-retail generation” with no definition provided.
Yes
Mission Valley Power - In order to help meet the fast approaching target date, Mission Valley Power will be voting affirmative in this ballot, with the hope these comments will be addressed in Phase II. If the ballot should fail, please address these comments in this phase. Thanks to the team for their good work.
Individual
Denise M. Lietz
Puget Sound Energy
Yes
This draft of the defintion is very much improved. We appreciate the work of the Standard Development Team and its efforts to increase the clarity of this important definition. For additional clarity, the first paragraph should read "Unless specifically excluded under the list of exclusions below or included or excluded through the Procedure for Requesting and Receiving an Exception from the Application of the NERC Definition of Bulk Electric System, all Transmission Elements operated at 100 kV or higher and Real Power and Reactive Power resources connected at 100 kV or higher, including those Transmission Elements described in the list of inclusions below." The sentence "This does not include facilities used in the local distribution of electric energy." should be removed from the first paragraph. Because this issue is specifically addressed in exclusions E1 and E3, the inclusion of this general sentence here is unnecessary and could even be ambiguous (raising the question of whether additional Transmission Elements might be excluded even if not described in E1 or E2).
Yes
Inclusion I1 references primary and secondary terminals of transformers, while Inclusions I2 and I5 reference the high-side of transformers. The SDT should consider using consistent terminology throughout the definition for this concept.
Yes
The term "per" should be replaced by "greater than the levels specified for a Generator Owner/Operator in". For a definition of this importance, the term "per" is too vague.
Yes
Yes
Yes
Yes

The language addressing generation resources in sections b and c of E1 could be more clear (an example of clearer language is section a of E3). At the least, the language in these two sections should be revised to read "... includes generation resources that are not identified in Inclusion I3 and that do not have an aggregate capacity exceeding 75 MVA ...".
Yes
Yes
Yes
No
Individual
Chris de Graffenried
Consolidated Edison Co. of NY, Inc.
No
• Please clarify the phrase “facilities used in local distribution” as used in the ‘core’ BES Definition. What is the purpose of this phrase in the BES Definition? How does the SDT propose that an entity demonstrate that a facility is used in local distribution? • Does this phrase “facilities used in local distribution” establish a jurisdictional boundary which takes precedence over all other parts of the BES Definition and Designations? • If this phrase does not take precedence over the remainder of the BES Definition and Designations, i.e., perhaps only over some parts BES Definition and Designations, or over none of the BES Definition and Designations, then what was the drafting teams understanding of and intent with regard to “facilities used in local distribution?” • What are Entities supposed to do with respect to “facilities used in local distribution” identified by State and Provincial regulators? • How has NERC assured that the posted BES Definition and Designations meet the intent of the Commission to establish an exemption process that avoids identifying “facilities used in local distribution” as part of the BES (¶37 and ¶39 below)? Recommendations: If “facilities used in local distribution” are to be excluded on jurisdictional grounds, then • The last sentence in the Core definition should be revised as follows: “This does not include facilities used in the local distribution of electric energy, as identified by a jurisdictional governmental authority.“ • We strongly recommend that the BES SDT adopt the FERC Seven Factor test as a proven basis for establishing the boundary between jurisdictional Transmission and non-jurisdictional “facilities used in local distribution.” Supporting Discussion: In FERC Order 743-A the Commission stated 69. We agree … that the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes” By adopting this FERC Seven Factor test, the BES SDT will have fulfilled its obligation to respond to these FERC mandates relating to “local distribution” as stated in FERC Order 743: “Determining where the line between ‘transmission’ and ‘local distribution’ lies,” (¶37), “To the extent that any individual line would be considered to be local distribution, that line would not be considered part of the bulk electric system” (¶39), to establish “[A] means to track and review facilities that are classified as local distribution to ensure accuracy and consistent application of the definition” (¶119). Supporting References: FERC Order 743 observed some believe that “the Commission’s [and by extension NERC’s] proposal exceeds its jurisdiction by encompassing local distribution facilities that are not necessary for operating the interconnected transmission network.” [FERC Order 743, ¶27.] In this regard FERC Order 743 states: At ¶37, Congress specifically exempted “facilities used in the local distribution of electric energy” from the definition. … Determining where the line between “transmission” and “local distribution” lies, which includes an inquiry into which lower voltage “transmission” facilities are necessary to operate the interconnected transmission system, should be part of the exemption process the ERO develops. And at ¶39, To the extent that any individual line would be considered to be local distribution, that line would not be considered part of the bulk electric system. And at ¶119, … [W]e believe that it would be beneficial for the ERO in maintaining a list of exempted facilities, to consider including a means to track and review facilities that are classified as local distribution to ensure accuracy and consistent application of the definition. Similarly, the ERO could track exemptions for radial facilities. [Emphasis added] Note that in ¶119 the Commission clearly distinguishes between “radial facilities” and “local distribution” just as it

differentiates between jurisdictional radials and non-jurisdictional local distribution facilities in footnote 82: 82 As discussed further below, the Commission uses the term “exclusion” herein when discussing facilities expressly excluded by the statute (i.e., local distribution) and the term “exemption” when referring to the exemption process NERC will develop for use with facilities other than local distribution that may be exempted from compliance with the mandatory Reliability Standards for other reasons. FERC Order 743-A suggests: 69. We agree with Consumers Energy, Portland General and others that the Seven Factor Test could be relevant and possibly is a logical starting point for determining which facilities are local distribution for reliability purposes …”

No

We suggest using wording from the Statement of Compliance Registry Criteria: Any generator regardless of size which is material to … [Ref: Statement of Compliance Registry Criteria, III.c.3-Blackstart] Define “material to” as a generator listed as a necessary part of the TOP-defined minimum system to restore the BES. This term “material to” should exclude Blackstart-capable generators not necessary for BES restoration or only used for local distribution system restoration. Wording Recommendation: Following the words “identified in” add the words “and material to” so that the new Inclusion reads: I3 - Blackstart Resources identified in and material to the Transmission Operator’s restoration plan.

No

Normally, static and dynamic devices supply Reactive Power (VARs) to or absorb VARs from the surrounding system. By their nature, VARs do not travel far, e.g., miles. So, VARs by their nature only produce local impacts. Please explain the meaning of the phrase “dedicated to supplying or absorbing Reactive Power,” with emphasis on explaining why the term “dedicated” was employed? How does an Entity determine if a particular static or dynamic device is “dedicated” to the BES? What Guidance documents can the BES SDT provide describing “dedicated” static and dynamic devices?

Yes

Please define the term “non-retail generation.”

Yes

Con Edison shares the concerns raised by the State of New York Department of Public Service (NYPSC) in its September 12, 2011 letter to NERC Chairman Anderson. The NYPSC expressed concern that the proposed BES Definition “would impose significant costs, costs that New York ratepayers will be expected to bear, with little or no increase in reliability benefits.” The BES definition is being revised without an assessment of costs or benefits. The SDT is encouraged to work with NERC Staff to perform such an assessment prior to providing the revised BES definition to the NERC Board. Regional Entities share this concern with cost effectiveness. In NPCC, the Board of Directors directed NPCC Staff to develop a methodology to assess the cost and benefit of Standards. This NPCC Cost Effectiveness Analysis Procedure (CEAP) establishes a process to address those concerns. The CEAP introduces two assessments of the estimated industry-wide costs of requirements into that Standard’s development process. The procedure adds supporting information and background for the NPCC stakeholders, ballot body and the NPCC Board of Directors. Moreover, during a 2010 FERC technical conference the Commission recognized that “reliability does not come without cost.” As a result, significant interest was expressed in development of a process to identify the costs for draft reliability Standards and the ability of the proposed standards to achieve the reliability objective(s) sought in a cost effective manner. We understand that it is a NERC priority to define adequate level of reliability and use it as the basis for determining the cost effectiveness of a proposed rule. While this has not yet been finalized, NERC could use this proposed standard as a test case for determining the relationship between costs and benefits.

Individual

Gail Shaw

Tillamook PUD
Yes
We strongly support the addition of the language regarding local distribution facilities, as it matches congressional intent to leave the regulation of these facilities to state and local authorities.
Yes
Tillamook PUD strongly agrees with this inclusion as written. It is consistent with the recent PRC-004 and PRC-005 interpretation and the NERC definition of Transmission. We believe the recent changes to this inclusion add clarity.
No
Referencing the Criteria which in turn references the BES definition creates a circular definition. Tillamook PUD encourages the adoption of specific thresholds that are technically justified. We also note that the Criteria and its revisions do not go through the standards development process, so that thresholds may change with little warning and without triggering an implementation plan for facilities that may be swept into the BES as a result.
Yes
Tillamook PUD agrees with the removal of the voltage language since the inclusions and exclusions only apply to equipment over 100 kV.
Yes
Tillamook PUD agrees both with the inclusion and with the revised language. The revised language removes the need to provide a separate definition for “Collector System”.
No
While we agree that reactive devices of sizable capacity connected at 100 kV or higher are needed for BES reliability, Tillamook PUD fails to see why this inclusion is needed as they are already captured by the 100 kV threshold. We would propose instead to eliminate this inclusion and substitute an exclusion for smaller capacity devices. If the SDT really believes an inclusion for reactive devices is needed, we suggest the SDT provide a technically justified capacity limit within the inclusion. In addition we suggest also including the phrase “…unless excluded under Exclusion E1, E2 or E4” similar to that in I1.
No
Tillamook PUD notes that a new term has been introduced, “non-retail generation,” with no definition provided. The answer to the question on this during the 9/28 webinar indicated that non-retail generation was behind the retail customer’s meter. We can see no reason why the net-metered PV systems should count toward the aggregate limit (exceeding the limit means no exclusion) while a non-blackstart thermal plant doesn’t (the radial system is excluded if any amount of load is present). We have also heard the SDT meant just the opposite of what was stated in the webinar. We ask that a reasonable definition for non-retail be provided within the BES definition document. We strongly agree that radial systems should be excluded and that the presence of normally open switching devices between radial systems should not cause them to be considered non-radial. Such a result would cause the removal of these devices to the detriment of the local level of service. We note that the singular “A normally open switching device” is used and suggest that an allowance be made for the possibility of multiple devices. “Normally open switching devices…”
Yes
No
We strongly agree that local networks should be excluded, since they act much like the radial systems excluded in E1 while providing a higher level of service to customers. These networks should not be discouraged in the name of reliability. We again object to the introduction of the new confusing term “non-retail generation” with no definition provided.
No
Any device that might be excluded under E4 has already been included per I5. Unless I5 is removed, or rewritten as suggested above; this exclusion will exclude nothing.
Yes
If Tillamook PUD had signed up to ballot in time, we would be voting yes with the hope that these

comments would be addressed in Phase II. If the ballot fails, please address these comments in this phase.
Individual
Thad Ness
American Electric Power
Yes
Yes
No
AEP is a proponent of cross-referencing related documents to avoid elements from becoming out of sync, however, rather than having the BES Definition document reference the ERO Statement of Compliance Registry Criteria, perhaps it should be the other way around. This definition document undergoes a more thorough industry development and review process. The ERO Statement of Compliance Registry Criteria does not get specific in regards to device types. The BES Definition document is a more appropriate place to designate inclusion criteria.
Yes
No
We believe more clarity is needed as to where exactly the “common point” is, for example in the case of a wind farm. This first common point could be interpreted as the output voltage of the wind generator, would be less than the 100kv threshold and thereby could (unintentionally?) exclude the facility as a whole. If this was unintentional, we recommend rewording I4 in a manner similar to I2.
No
I5 only specifies voltage limits, and makes no mention of reactive limits. We suggest that the drafting team consider adding reactive capacity to these criteria as well.
No
AEP supports the concept of the exclusion of radial systems, however further clarification is needed regarding whether or not the source equipment is included as part of the radial system (for example, ring bus or breaker and a half bus configurations). Regarding the following text: “Note – A normally open switching device between radial systems, as depicted on prints or one-line diagrams for example, does not affect this exclusion.” We interpret this as not including two radial lines which could be tied together through a normally open switch, are we correct? Additional clarity may be needed regarding this note.
No
It appears an entity with less than 75 MVA would not have been included as part of the earlier inclusions. Is it necessary to note this threshold once again in the exclusion section? Might it be possible to add some of the “behind the meter load” to the inclusion section to reduce the amount of both the inclusions and exclusions? Doing so would likely provide more clarity to the standard.
Yes
No
Does this refer to distribution level or reactive power resources? If so, it would appear these are not included as part of I5. Or instead, does this refer to customer equipment at BES voltages? If it is the latter, we recommend E4 be reworded to state “Reactive Power devices that meet the Inclusion criteria of I5 that are owned and operated by the retail customer solely for its own use…”
Yes
There needs to be some clarification regarding the default status of an asset, as well as the order and priority of the inclusion and exclusion classifications within the definition. First, prior to any evaluation by virtue of the definition, is an asset by default excluded from the BES, or rather, it is included? In addition, once the definition is used to evaluate an asset which has both inclusion attributes and exclusion attributes, which of the two classifications has greater weight? For example, if an asset is first included by the BES definition inclusion criteria can it then be excluded by BES definition

exclusion criteria? Or instead, if an asset is first excluded by BES definition exclusion criteria can it then be included by the BES definition inclusion criteria? AEP's recommendation is that an asset, by default, not be considered part of the BES. Next, the asset would be evaluated by the inclusion criteria as specified within the definition. Next, any asset explicitly included by the inclusion criteria is then evaluated using the exclusion criteria. Once the entity has made their determination based on the definition, exception requests could then be made to include or exclude assets as appropriate. We believe our interpretation is what is implied by the draft definition, however, this needs to be explicitly communicated within the definition itself.
Individual
Joe Petaski
Manitoba Hydro
Yes
Manitoba Hydro agrees in general with the changes made to the core definition but the sentence 'This does not include facilities used in the local distribution of electric energy' should be removed as it is covered under Exclusion E3 and reduces the clarity of the core definition.
Yes
Yes
No
Inclusion I3 should specifically state that only the Blackstart Resources specified through EOP-005-2 R1.4 are included in the BES since "Transmission Operator restoration plan' is not a NERC defined term. Suggested wording: "I3 - Blackstart Resources identified through EOP-005-2 R1.4"
Yes
Manitoba Hydro agrees with I4 but it does create a discrepancy between the BES Definition and the Registration Criteria Document. The Registration Criteria document should be updated and I2 and I4 should be combined into a single Inclusion.
Yes
Yes
Manitoba Hydro agrees with E1 but the wording of the note regarding 'normally open switching devices' is unclear. In the Industry Webinar on September 28th, the Drafting Team made it clear that the note means that if an element can be connected to the BES from multiple points but under normal operating conditions it is only connected to the BES at a single point by means of normally open switches, then the element is still excluded from the BES provided it meets either the E1 a, b, or c criteria. The team also noted that the discretion to operate the normally open switching devices in the best interests of reliability rests with the operating entity. Suggested wording: "Note: The ability to connect a group of contiguous transmission Elements from multiple connection points of 100kV or higher through normally open switching devices does not negate this Exclusion. " As well, part c) of E1 should be changed to "c) Only serves Load and includes…"
Yes
Manitoba Hydro agrees with E2 but suggests that the phrase 'A generating unit or multiple generating units' be replaced with 'Generating resource(s)' for clarity and consistency.
No
Manitoba Hydro agrees with the Local Network Exclusion but disagrees with the drafting team's removal of the requirement to have protective devices protecting the BES from the LN. We suggest that the following requirement is re-inserted into E3 to meet the LN Exclusion: "a) Wherever connected to the BES, the LN must be connected with a Protection System."
Yes
No
Group

Janet Smith
Arizona Public Service Company
No
Individual
Robert Ganley
Long Island Power Authority
Yes
Need to define the term "local distribution"
Yes
Yes
Yes
Yes
Need to define the term "common point"
Yes
Yes
Need to clarify what is a "single point of interconnection" e.g. is it a bus section or a substation
Yes
No
Main paragraph and items E3b and E3c adequately define a Local Network. It seems like the intent to exclude non bulk distribution systems would still be included because of E3a. E3a should be eliminated. If not eliminated, need to define the term "underlying Elements".
Yes
Exclusion should identify a maximum value.
No
Individual
John A. Gray
The Dow Chemical Company
Yes
The Dow Chemical Company (“Dow) is an international chemical and plastics manufacturing firm and a leader in science and technology, providing chemical, plastic, and agricultural products and services to many essential consumer markets throughout the world. Dow and certain of its worldwide affiliates and subsidiaries, including Union Carbide Corporation, own and operate electrical facilities at a

number of industrial sites within the U.S., principally, in Texas and Louisiana. The electrical facilities at these various industrial sites are configured similarly and perform similar functions. In most cases, a tie line or lines connect the industrial site to the electric transmission grid. Power is delivered from the electric transmission grid to the industrial site through the tie line(s). Lines “behind-the-meter” within the industrial site then deliver power to individual manufacturing plants within the site. Additionally, cogeneration facilities, some of which are well over 75 MW in size, are located at a number of industrial sites owned by Dow and its subsidiaries. These cogeneration facilities generate power that is distributed within the industrial site and used for manufacturing plant operations. In some instances, excess power not required for plant operations is delivered back into the electric transmission grid through the tie line(s) connecting the industrial site to the grid. While the tie lines and some of the internal lines at these industrial sites operate at 100kV or higher, they do not perform anything that resembles a transmission function. Rather than transmit power long distances from generation to load centers, the tie lines and internal lines perform primarily an end user distribution function consisting of the distribution of power brought in from the grid or generated internally to different plants within each industrial site. In some cases, the facilities also perform an interconnection function to the extent they enable power from cogeneration facilities to be delivered into the grid. The voltage of the tie lines and internal lines at these industrial sites is dictated by the load and basic configuration of each site. Higher voltage lines are used when necessary to meet applicable load requirements or to reduce line losses. That does not mean that such lines perform a transmission function. At some sites, Dow is registered as a Generation Owner and Generation Operator. At other sites, the applicable Regional Entity has found that such registration is not required because of the relatively small amount of power supplied to the grid from the applicable cogeneration resources, even though those cogeneration resources have an aggregate capacity greater than 75 MVA (gross aggregate nameplate rating). Tie lines (to the grid) and internal lines at an industrial site that operate at 100kV or higher should be excluded from the BES definition if, due to the relatively small amount of power supplied to the grid from the generation resources at the site, the owner of those generation resources is not required to be registered as a Generation Owner and the operator of those generation resources is not required to be registered as a Generation Operator. At sites where the owner of the generation resources is registered as a Generation Owner and the operator of those generation resources is registered as a Generation Operator, the internal lines (between the generation resources and the manufacturing plants) that operate at 100kV or higher should be excluded from the BES definition, because they are distribution and not transmission facilities. The lines interconnecting the generation resources at such sites to the transmission grid should be included in the BES definition, but the owner and operator of such interconnection lines should not be registered as a Transmission Owner or Transmission Operator. In no instance has a Regional Entity determined that Dow or any subsidiary should be registered as a Transmission Owner or Transmission Operator. Instead, such interconnection lines should be considered as part of the generation resource and Generation Owners and Generation Operators should be subject to reliability standards specifically developed for such interconnection lines. Dow is strongly opposed to any BES definition that would result in either the tie lines or the internal lines at industrial sites being subject to the mandatory reliability standards applicable to Transmission Owners and Transmission Operators. Complying with reliability standards would cause Dow and its subsidiaries to incur substantial compliance costs and create potential exposure to penalties in the future for noncompliance. Perhaps such costs and exposure could be justified if subjecting these facilities to compliance with reliability standards resulted in a material increase in reliability of the BES, but there is no reason to believe that will be the case. In fact, the opposite might be true. The tie lines and internal lines at industrial sites owned by Dow and its subsidiaries have been operated for decades as end user distribution and interconnection facilities, and practices and procedures have developed over the years that have enabled such operations to achieve a high degree of reliability for such sites. Requiring these facilities to now operate in a different manner as transmission facilities may well result in a degradation of the reliability of the manufacturing plants located at such sites. For example, outages would have to be coordinated with the RTO, which may not be interested in coordinating such outages with scheduled manufacturing plant outages. In light of these considerations, Dow agrees with the proposed revisions to the core definition, particularly the proposal to include a sentence expressly excluding facilities used in the local distribution of electric energy, provided it is understood that end user-owned delivery facilities located “behind-the-meter” are, regardless of voltage level, presumptively outside the scope of this definition.

Yes

No
Comments: Dow agrees with the proposed revisions to Inclusion I2, particularly the proposal to expressly reference the ERO Statement of Compliance Registry Criteria, but the following phrase should be added at the end “unless excluded under Exclusion E2”.
Yes
No
It is not clear how “Dispersed power producing resources” differ from “Generating Resource (s)” in I2. Inclusion I4 should clarify this. We suggest that the phrase “Variable Energy Resources” be used instead of “Dispersed power producing resources”. Variable Energy Resources should be defined as “Resources producing electricity using wind or solar energy.” The following phrase should be added at the end “unless excluded under Exclusion E2”.
No
The phrase “or through a dedicated transformer with a high-side voltage of 100 kV or higher” is inconsistent with I1 and would bring Reactive Power Equipment that is lower than 100Kv into the BES definition. This phrase should be deleted. The following phrase should be added at the end “unless excluded under Exclusion E4”.
Yes
Dow generally agrees with the proposed revisions to Exclusion E1, but believes that several additional clarifying revisions should be made. First, the phrase “a single point of connection” in the introductory sentence should be revised to read “a single point of connection (including multiple connections to the same ring bus or different buses where the energy normally flows in the same direction)”. This revision is intended to ensure that radial systems include arrangements involving multiple parallel lines that are designed to operate as a single radial system, but that nevertheless connect at the grid ring bus or different buses on the grid for reliability. Second, for this same reason, an additional (i.e., second) note should be added to the end of Exclusion E1 that reads as follows: “Note, a normally closed switching device that enables multiple lines emanating from the same grid ring bus or different grid buses to operate as a single radial system does not affect this exclusion.” Third, in “c),” the phrase “with an aggregate capacity of non-retail generation less than or equal to 75 MVA (gross nameplate rating)” is confusing and potentially inconsistent to the extent that “non-retail generation” may be different from “gross nameplate rating.” The apparent intent of the clause is to exclude radial systems that serve both load and generation, provided the generation capacity made available to the transmission grid does not exceed 75 MVA. Dow would recommend that the phrase be revised to read “where the net capacity provided to the transmission grid does not exceed 75 MVA.” This revision would provide greater clarity and is consistent with the language used in Exclusion E2.
Yes
Dow generally agrees with the proposed revisions to Exclusion E2, but believes that a clarifying revision should be made. Substitute “transmission grid” for “BES” in the phrase “provided to the BES” to insure that the measurement is to the grid.
Yes
Dow is uncertain whether end user-owned, behind-the-meter delivery facilities of the sort it has described above would fall within the scope of the core BES definition proposed by NERC. To date, none of the Regional Entities has suggested that Dow should register as a Transmission Owner or Transmission Operator with respect to any of these Dow-owned delivery facilities. If a literal application of the proposed BES Definition would, because of their voltage level or for any other reason, include such facilities, then Dow has an interest in assuring that the E3 exclusion for "local network" facilities is structured to embrace them. To that end, Dow would propose, first, the elimination of the 300 Kv cap for these facilities. Dow has systems that operate above 300 Kv due solely to the capacity of the lines to supply power over the distance required at our large manufacturing sites. Second, for the same reasons discussed above (in response to question #7), the phrase “do not have an aggregate capacity of non-retail generation greater than 75 MVA (gross nameplate rating)” in “a)” should be changed to “the net capacity provided to the transmission grid does not exceed 75 MVA.” Third, the introductory phrase in “b)” -- “Power flows only into the LN” -- is inconsistent with the recognition in “a)” (as amended pursuant to Dow’s above suggestion) that

power may flow out of an LN and into the transmission grid if there is generation connected to the LN and the 75 MVA limit is observed. Dow recommends either deleting the introductory clause or correcting it to read “Power is not transferred through the LN.”
No
The term “solely” should be replaced by the term “primarily”. All devices to control Reactive power behind-the-meter arguably provide some benefit to the transmission grid.
No
Group
Jonathan Hayes
Southwest Power Pool
No
The last sentence of the core states that no distribution facilities will be included, but some of these facilities could be included due to blackstart resources. We don’t disagree with the idea of removing distribution facilities, but would like to see some clarification or qualifier.
Yes
Yes
Yes
No
We believe that the removal of the wording “single site” in I2 would remove the need to cover dispersed power producing resources in I4. What is the reason for keeping I4 in this version? Also we understand that 75MVA is held in I4 because of no direct link to the registry criteria, but feel that this number could change in phase two of the project which would create unnecessary work in the future.
No
We understand that this inclusion is used to capture those devices other than generation resources, but the language leads us to believe that it could include all generators used to supply or absorb reactive power. We would suggest that I5 be changed to read “ –Static or dynamic devices specifically used for supplying or absorbing Reactive Power that are connected at 100 kV or higher, or through a dedicated transformer with a high-side voltage of 100 kV or higher, or through a transformer that is designated in Inclusion I1.
No
Why was the defined term for “T”ransmission dropped in this version of the definition? This should be kept in this version of the definition as well.
No
This number could change in phase two of the project which would create unnecessary work in the future.
Yes
No
This particular Exclusion doesn’t address the qualifier as to the impact to the BES. We request that it emulate the language provided for E2 (behind the meter gen) and classified for this specific exclusion.
Yes
A reference needs to be made to the ROP changes which also provide a mechanism whereby Elements may be excluded/included in the BES. Without that reference the proposed definition does not completely include all means for exceptions/inclusions. We would suggest the definition be expanded to say ‘…modified by the list shown below or as provided by Appendix 5C of the NERC Rules of Procedure. We submitted this in the original posting and the response received was that it was inadvertently left out and that it would be placed back in. We don’t see the reference in this draft of the definition.

Individual
Rick Hansen
City of St. George
Yes
The core definition is acceptable as long as the concerns for inclusion and exclusion are addressed as outlined in the other comments.
Yes
No
The basis for the Compliance Registry Criteria generation levels for inclusion seems to be arbitrary with little or no justification. As currently proposed, a small 20 MVA generator must comply with same requirements as large units of several hundred MVA of generation capacity. Phase 2 of the BES project may help address the issue but in the meantime many facilities must comply with numerous standards with little or no benefit to the reliability of the actual BES. No timeline for Phase 2 is indicated. Finding a bright line number for the generation levels on a per unit or overall plant basis will be a difficult task, but the present MVA levels of the Registration Criteria are very low for automatic inclusion. The compliance requirements of an entity should match the impact to the system.
Yes
No
This language follows the 75 MVA plant requirements from the Registration Criteria. See comments to question 3 (for I2) above. Additional detail is needed to clarify exactly at what point in the dispersed system the BES starts and what is not BES.
No
A reasonable minimum value for inclusion should be added. As presently written all static or dynamic devices would be included in the BES regardless of size.
No
Radial systems should be excluded as generally outlined in E1, however the generation levels (of 75 MVA) are too restrictive. The primary criteria should be, does power flow into the radial system? If there is always flow into the radial system, generation levels should not prevent exclusion from the BES.
No
Same basic comments and concerns as question #7.
No
The exclusion of Local Networks should be provided, however the generation level limits are too restrictive. As long as the power flow is into the system the generation level of the local network shouldn't matter as long as it is being used to serve local load. E3a should be deleted from the definition, or at least some higher level of allowed generation should be included. Another possibility would be a ratio of local load to local generation. Areas with local generation serving local load will have similar characteristics or affects to the BES system as were used in the Local Network justification paper (Appendix 1) included with the documents. If some reasonable level of local generation was added to the example system it is unlikely that the affects to the BES flows would change from what was presented in the example.
Yes
Yes
The small utility exclusion issues discussed in the first draft of the documents are not included (draft 1 proposed E4) nor addressed in the draft 2 documentation. Under the present definition many small utilities with local generation to serve its own local load will be required to register for additional functions, or at a minimum go through a long, expensive, time consuming process to get an individual exclusion from the BES. The topics that have been postponed to Phase 2 of the project are critical to and will have a direct impact to many utilities. Phase 2 needs to have specific shorter than normal

timelines established, similar to what Phase 1 has had. The present definition and standards in general makes little or no consideration for the actual impact of an entity or facility on the bulk system. As such small utilities with a few miles of 115 kV or 138 kV lines and some generation are required to meet the same requirements as large utilities with 100's or 1,000's of miles of 345 kV or 500 kV lines and that operate very large generation plants of several hundred MVA of capacity. All utilities support reliability improvement, but the requirements and associated costs need to match their actual impact to the overall system.
Group
Frank Gaffney
Florida Municipal Power Agency
Yes
FMPA appreciates the SDT's work on this project. For the most part, FMPA supports what it believes to be the intent of the proposed language. The proposed specific exclusion of facilities used in the local distribution of electric energy is appropriate and consistent with Section 215 of the Federal Power Act. However, we have suggestions to better carry out what we believe to be the SDT's intent. The first sentence can be read as: "… all … Real Power and Reactive Power resources connected at 100 kV or higher", which is surely not what the SDT intends. The basic problem is that Inclusions I2 and I4 do not modify the first sentence, e.g., from a set theory perspective, the set described by the first sentence includes the sets described in inclusions I2 and I4; hence, I2 and I4 do not modify the first sentence. From a literal reading, this would cause any size generator connected at 100 kV to be included, which is surely not the intent of the SDT. For similar reasons, the core definition and Inclusion I5 now has the effect of including all generators connected at 100 kV since a generator is a "dynamic device … supplying or absorbing Reactive Power". The word "dedicated" in I5 is not sufficient in FMPA's mind to unambiguously exclude generators from this statement. FMPA suggests the following wording to address these issues: "Transmission Elements (not including elements used in the local distribution of electric energy) and Real Power and Reactive Power resources as described in the list below, unless excluded by Exclusion or Exception: a. Transmission Elements other than transformers and reactive resources operated at 100 kV or higher. b. Transformers with primary and secondary terminals operated at 100 kV or higher. c. Generating resource(s) (with gross individual or gross aggregate nameplate rating per the ERO Statement of Compliance Registry Criteria) including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100 kV or above. d. Blackstart Resources identified in the Transmission Operator's restoration plan. e. Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a system designed primarily for aggregating capacity, connected at a common point at a voltage of 100 kV or above, but not including generation on the retail side of the retail meter. f. Non-generator static or dynamic devices dedicated to supplying or absorbing more than 6 MVAr of Reactive Power that are connected at 100 kV or higher, or through a dedicated transformer with a high-side voltage of 100 kV or higher, or through a transformer that is designated in bullet 2 above."
Yes
Please see comments to Question 1
Yes
Please see comments to Question 1
Yes
Please see comments to Question 1
Yes
We recommend clarifying that the dispersed power resources covered by this inclusion do not include generators on the retail side of the retail meter. Specifically, we recommend that the Inclusion read: "Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a system designed primarily for aggregating capacity, connected at a common point at a voltage of 100kV or above, but not including generation on the retail side of the retail meter."
To help clarify and to avoid inclusion of de minimis reactive resources, we propose a size threshold of 6 MVAr consistent with the smallest size generator included in the BES at a 0.95 power factor, which is a common leading power factor used in Facility Connection Requirements for generators. In other

words, 6 MVAr is consistent with typically the least amount of MVAr required to be absorbed by the smallest generator meeting the registry criteria.

Yes

FMPA supports the exclusion of radial systems from the BES Definition. Such systems are generally not "necessary for operating an interconnected electric transmission network," the standard in Orders 743 and 743-A. We have several suggestions to clarify the proposed language for this Exclusion. Proposed Exclusion E1 refers to "[a] group of contiguous transmission Elements that emanates from a single point of connection of 100 kV or higher." We appreciate the SDT's clarification of the point of connection requirement, but the term "a single point of connection" should be further defined (more clearly than just by voltage), and should be generic enough to encompass the various bus configurations. It is not the case, for example, that each individual breaker position in a ring bus is a separate point of connection for this purpose; in that situation, a bus at one voltage level at one substation should be considered "a single point of connection." Some examples of configurations that should be considered a single point of connection for this purpose are at https://www.frcc.com/Standards/StandardDocs/BES/BESAppendixA_V4_clean.pdf, Examples 1-6. Although the core definition (appropriately) refers to "Transmission Elements" (with a capital "T"), proposed Exclusion E1 refers to "transmission Elements" (with a lowercase "t"). To avoid confusion, either "Transmission" should be capitalized in both locations, or the word "transmission" should simply be deleted from Exclusion E1, leaving a "group of contiguous Elements." We understand that the lack of capitalization may have been a deliberate choice by the SDT in an attempt to avoid confusion that SDT members believe exists in the Glossary definition. If the Glossary definition of Transmission is unclear—which FMPA does not necessarily believe is the case—the answer is not to simply abandon the Glossary definition in favor of an entirely undefined term; it is to submit a SAR to improve the Glossary definition. Exclusion E1(c) refers to "an aggregate capacity of non-retail generation less than or equal to 75 MVA." "Non-retail generation" is potentially ambiguous, because it could be read as distinguishing between generation that will be sold at wholesale and generation that is used by the retail provider to meet retail load. On the understanding that the intent is in fact to describe generation behind the end-user meter, sometimes referred to as "behind-the-second-meter generation," we suggest the following revision: "an aggregate generation capacity less than or equal to 75 MVA, not including generation on the retail customer's side of the retail meter." Exclusion E1 concludes with a "Note": "A normally open switching device between radial systems, as depicted on prints or one-line diagrams for example, does not affect this exclusion." The Note should not specify the types of evidence required to prove a normally open switch, and the phrase "as depicted on prints or one-line diagrams" should be deleted. This phrase is equivalent to a "Measure" in a standard and should not be embedded in the equivalent of a "Requirement." Since the phrase only gives an "example," it does not in fact add anything to the Note, but may lead to confusion over what sort of evidence is required.

Yes

Yes

: FMPA supports the exclusion of Local Networks from the BES. Such systems are generally not "necessary for operating an interconnected electric transmission network," the standard in Orders 743 and 743-A. However, we have several suggestions to clarify the proposed language for this Exclusion. Exclusion E3(c) states: "Power flows only into the LN: The LN does not transfer energy originating outside the LN for delivery through the LN." This statement is unclear because the two parts mean different things. FMPA proposes rewriting this sentence to state: "Power flows only into the LN, that is, at each individual connection at 100 kV or higher, the pre-contingency flow of power is from outside the LN into the LN for all hours of the previous 2 years" to help clarify the intent. Two years is suggested because it is the time period set out in the draft exception application form for which an applicant should state whether power flows through an Element to the BES. FMPA' comments in response to Question 7 above regarding "points of connection at 100kV or higher" and "non-retail generation" are applicable to Exclusion E3 as well. The term "bulk power," which occurs twice in Exclusion E3, is vague and could be read incorrectly as a reference to the statutorily-defined "bulk-power system," which is not, we think, the SDT's intent. The word "bulk" should be deleted, so that the Exclusion simply refers to transferring "power" across the interconnected system. FMPA raised this concern in response to the last posting of the BES Definition. In response, the SDT removed some instances of "bulk power" but left the remaining two, stating that "the SDT believes it provides

conceptual value to the exclusion principle." The SDT does not state what conceptual value the term is intended to provide; on the assumption that it relates to a distinction between transferring power from local generation to serve local load, and transferring power over longer distances, FMPA suggests, as an alternative to simply deleting the word "bulk," that the Exclusion be revised to refer to "transfers of power from non-LN generation to non-LN load."

Yes

Individual

Donald E. Nelson

Massachusetts Department of Public Utilities

No

The Massachusetts Department of Public Utilities ("MA DPU") appreciates the opportunity to provide comments on the second draft definition of the Bulk Electric System ("BES"). Massachusetts is the largest state by population and load in New England. It comprises 46% of both the region's population and electricity consumption. Generating plants located in Massachusetts represent 42% of New England's capacity and our capitol city, Boston, is the largest load center in the region. Some of the revisions since the last posting of the draft BES definition have improved the proposed language. However, the MA DPU has a number of concerns regarding both the substance of the definition and the process for developing this standard: 1) Phased Approach. While well-intentioned, separating the BES definition project into two separate phases is problematic from both a procedural and substantive perspective. While we recognize that the filing due date is rapidly approaching, the BES definition cannot be considered in a vacuum, divorced from the concerns raised by a number of parties in response to past postings of the BES definition. The issues NERC has identified for consideration during the proposed "Phase 2" are inseparable from the development of the BES definition (e.g., generation thresholds, technical justification for the 100 kV threshold) and should be squarely addressed before a definition is adopted and ratepayers incur costs related to compliance with mandates that may or may not be revised through the second phase of the project. The importance of considering concerns before adopting a definition is heightened by the proposed two-year implementation requirement. This short implementation period almost guarantees that entities will commit resources shortly after adoption of the definition to ensure compliance within the mandated period. In other words, ratepayers will bear costs related to compliance irrespective of any change resulting from the Phase 2 process or the exception process. Expediency, while understandable given the filing deadline, must be balanced against the risk that a multi-phased approach could lead to significant consumer costs without attendant meaningful reliability benefits. 2) Cost-Benefit Analysis. A cost impact analysis should be performed as part of developing any reliability standard. However, the development of the BES definition has failed to consider the cost impacts of the definition (and its inclusions and exclusions) and has not weighed these impacts against identified benefits that the definition would achieve. The MA DPU supported the May 21, 2011 comments from the New England States Committee on Electricity ("NESCOE") on the last posting of the BES definition. In these comments, NESCOE stated that "any new costs a revised definition imposes – which fall ultimately on consumers – should provide meaningful reliability benefits." A cost-benefit analysis should be integral to the development of a BES definition and, indeed, any reliability standard. This analysis should include a probabilistic risk assessment examining the likelihood of an event and the costs and risks resulting from such event, which should be weighed against the costs of complying with the proposed reliability measures. 3) Technical Justification. In addition to performing a cost-benefit analysis, a technical basis must be provided to justify a proposed reliability standard. However, the proposed BES definition does not provide a technical justification for the 100 kV threshold, the threshold for generation resources, or other elements of the definition. As stated above, while well-intentioned and understandable, deferring this technical justification to a later and separate phase of the project is a flawed and potentially costly approach. Providing a technical justification for a reliability standard is a core function of standards development and should be addressed at the forefront of the process rather than relegated to a separate phase largely undertaken after a standard is filed. In Order 743, the Federal Energy Regulatory Commission ("FERC" or "the Commission") directed NERC to revise the BES definition. Revision to Electric Reliability Organization Definition of Bulk Electric System, Order No. 743A, 134 FERC ¶ 61,210 (Mar. 17, 2011) at P 8, citing to Revision to Electric Reliability

Organization Definition of Bulk Electric System, Order No. 743, 133 FERC ¶ 61,150 (2010). The Commission stated that one way NERC could address the technical and policy concerns FERC had identified would be to institute a "bright-line threshold that includes all facilities operated at or above 100 kV except defined radial facilities, and establish an exemption process and criteria for excluding facilities [NERC] determines are not necessary for operating the interconnected transmission network." Id. at P 8. However, the Commission made clear in Order 743 that NERC may propose an alternative proposal and that the 100 kV threshold is an "initial line of demarcation" to be refined through exclusions and exemptions. Id. at PP 8, 40. Accordingly, unless and until NERC provides a technical justification for its approach, the Standard should use the 100 kV threshold concept in a way that is consistent with the Commission's guidance. Specifically, the two criteria that bound the BES definition are (1) the statutory exclusion of facilities used in local distribution, and (2) the requirement that the facilities included be "necessary for reliable operation" of the interconnected transmission system. A definition that recognizes these limits, coupled with an efficient and transparent exception process, would appear to meet the Commission's expectations. For these reasons, absent a technical justification for imposing a 100 kV threshold, the MA DPU supports the revised core definition offered by NESCOE in comments filed on this 2nd Draft: "All Transmission Elements operated at 100 kV or higher and Real Power and Reactive Power resources connected at 100 kV or higher that are necessary for the reliable operation of the interconnected transmission network, including but not limited to the facilities listed below as Inclusions, and excluding (1) facilities that are used in the local distribution of electric energy, and (2) the facilities and systems listed below as Exclusions. Other Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process." The definition of the BES is critical to NERC's role as ERO and will have a significant impact on system reliability and cost to consumers. While FERC had concerns that the existing definitions for the bulk power system were under-inclusive, the proposed Standard, as drafted, risks erring in the opposite direction and appears inconsistent with the Commission's guidance in this area.
No
The MA DPU supports the revised Inclusion I1 language that treats Exclusions E1 and E3 as alternative exclusions, either of which may qualify as an exclusion. However, specificity is needed regarding what equipment is included in I1 (e.g., autotransformers, PARs, primary, secondary, tertiary windings).
No
Failing to establish a known MVA rating at this stage is problematic. The BES definition cannot be considered in a vacuum, and adjusting or establishing thresholds such as MVA ratings will create regulatory uncertainty and may result in additional costs and unnecessary system upgrades. Additionally, Inclusion I2 should remove the reference to the Statement of Compliance Registry Criteria. The definition should be the governing document regarding generation that is included in the BES.
No
The inclusion should be revised to specify that only those blackstart units that are "material to" the BES are included in the definition.
No
The aggregate 75 MVA of connected generation does not appear to be adequately supported by technical analysis and appears, on its face, as too low. Among our concerns is that such a low level will have a potential adverse impact on the development of renewable generation resources. In addition, the inclusion needs to be clarified in order that entities have clear guidance on what is meant by "common point of interconnection."
No
The inclusion of all devices that supply reactive power to the BES is unnecessary and will result in unjustified costs to the ratepayer. Static devices (fixed capacitors) should remain excluded from the BES as they are dispatched by operations personnel, and if one fixed capacitor bank fails, the operator can replace its impact by switching in another fixed bank. This represents routine operation of the system. On the other hand, dynamic devices may be important to maintaining voltage stability of the system. These installations typically are rated to supply or absorb 75 MVA or more to or from the BES. Therefore, the MA DPU suggests that dynamic reactive power devices rated at 75 MVA or more could be included in the BES. Further, revised inclusion I5 is a new inclusion that lacks definition

(and appears to be redundant with the general BES definition). NERC should provide technical justification for the additional language under Inclusion I5.
Yes
The aggregate 75 MVA of connected generation appears too low and would benefit from additional technical justification.
Yes
While the MA DPU generally supports Exclusion E2, no information has been provided by NERC demonstrating that the 75 MVA rating is based on any sound technical analysis.
Yes
The MA DPU generally supports this exclusion but believes it is too narrow. As noted in the response to question 7, Exclusion E3 should likely allow a higher level of aggregate generation MVA on a Local Network. In addition, local networks should not necessarily be ineligible for Exclusion E3 simply because an amount of power may transfer out of the network at times. NERC's draft technical network exclusions document should be amended such that local networks would be permitted to qualify for network exclusions under E3 if power flowing out of the network is minimal and would not likely adversely impact the BES.
Yes
While we are generally supportive of this exclusion, the term "retail" needs to be clarified (i.e., are retail customers of all sizes intended to be excluded?).
No
Individual
David Burke
Orange and Rockland Utilities, Inc.
Yes
Yes
Minimum Power system and material? NERC registry criteria for generation section "3C3"
No
Should also mention "unless excluded under Exclusion E1 or E3".
No
Please clarify on "single point of connection". It seems like less confusion if "single source" is used here instead of "single point of connection".
No
We know that N-1 is assumed when power-flow study is performed, however, N-1 should be mentioned here for clarification.
Yes
Individual
Bud Tracy
Blachly-Lane Electric Cooperative (BLEC)
Yes
The Blachly-Lane Electric Cooperative (BLEC) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System ("BES") that markedly improves both the existing definition and the SDT's previous proposal. BLEC therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being

developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. BLEC strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase “Unless modified by the lists shown below” to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., “all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher”) and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for “facilities used in the local distribution of electric energy.” As the starting point for the BES definition, BLEC supports the use of the phrase “all Transmission Elements” and the qualifying sentence: “This does not include facilities used in the local distribution of electric energy.” This language helps ensure that FERC, NERC, and the Regional Entities (“REs”) will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act (“FPA”). In Section 215(a)(1), Congress unequivocally excluded “facilities used in the local distribution of electric energy” from the keystone “bulk-power system” definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – “instability, uncontrolled separation, [and] cascading failures,” 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). BLEC thanks the SDT for the excellent work to include this sentence. For similar reasons, BLEC believes the use of the phrase “Transmission Elements” as the starting point for the base definition is desirable because both “Transmission” and “Elements” are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term “Transmission” makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria (“SCRC”) (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. BLEC recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, BLEC agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, BLEC is prepared to support the BES definition as proposed by the SDT. While BLEC supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, BLEC believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, BLEC will support the SDT’s proposal.

Yes

We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

BLEC supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. BLEC believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC

is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating

as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."

Yes

BLEC supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

BLEC supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which we discuss in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

BLEC has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, BLEC believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Finally, BLEC believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. BLEC strongly believes that there should be technical justification for thresholds for this issue and all other issues.

Yes
BLEC continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term "transmission Elements" in the initial paragraph should be changed to "Elements." Radial systems are not transmission systems and including the word "transmission" in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to "generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). We urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," discussed in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC's Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The "Note" as drafted by the SDT indicates that "a normally open switching device between radial systems" will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, BLEC strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a "note" suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.
BLEC supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, BLEC urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term "Qualifying Aggregate Generation Resources" or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.
Yes
BLEC strongly supports the exclusion of Local Networks ("LNs") from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs,

however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. BLEC also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, BLEC supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to "improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system." BLEC supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. BLEC believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a "group of contiguous transmission Elements operated at or above 100kV" the starting point for identifying a LN would be improved by deleting the term "transmission" from this phrase. This is so because LNs are not used for transmission and the use of the term "transmission Elements" is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word "transmission" if the word is deleted and the Exclusion applies to any "group of Elements operated at 100kV or above" that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term "transmission Elements" is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. BLEC also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: "The LN does not transfer energy originating outside the LN for delivery through the LN." We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: "The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN." We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term "Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is meant by the use of the term "non-retail generation" in subparagraph (a). From context, we believe the SDT considers "non-retail generation" to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer's own

load. We therefore suggest that the SDT replace the term "non-retail generation" with "generation located behind the retail customer's meter." Similarly, we are unsure what is meant by the phrase "the LN and its underlying Elements." We believe the phrase "and its underlying Elements" could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase "the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system." We believe this phrase more accurately reflects the SDT's intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. BLEC also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: "Except in unusual circumstances, power flows only into the LN." Finally, we note that the LN exclusion must not operate in any way as a substitution for the statutory prohibition on including "facilities used in the local distribution of electric energy" in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a "facility used in the local distribution of electric energy," then it is not part of the BES in the first instance, and so consideration

of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.
Yes
BLEC supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.
No
BLEC extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. BLEC supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, BLEC is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that BLEC specifically supports the changes made by the SDT in the “Effective Date” provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. BLEC supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. BLEC also supports the 24-month transition period for the reasons laid out by the SDT.
Group
Steve Rueckert
WECC
Yes
Yes
Yes
Yes
WECC agrees with the inclusion of the blackstart units, but does not agree with the deletion of the cranking path from the I3. The cranking path should be included in the definition since the NERC standards EOP-005 and CIP-002 R1.2.4 require documenting the cranking path. The revised CIP-002-4 Standard identifies the cranking path as a critical asset in Attachment 1 (1.5).
Yes
WECC seeks further clarification on Inclusion 4. Several comments were submitted in the last round of comments whether each individual wind turbine in a wind farm, will be included in the BES. WECC believes the language change to I4 by the SDT did not address this issue. The current language in I4 could be interpreted as each individual turbine (example 1MW) would be part of the BES. WECC believes that I4 is not intended to include each individual wind turbine in a wind farm as a BES element but rather to include the point at which the aggregation becomes large enough to meet the aggregate capacity threshold of 75 MVA. WECC recommends the SDT modify the language in I4 to clarify this issue.
Yes
WECC believes I5 should be modified to identify a minimum Reactive Power threshold for static or dynamic devices similar to the threshold identified for generating resources in I2. As worded, any size

device dedicated to supplying or absorbing Reactive Power that is conected at 100 kV or higher, no matter how small, would be included in the BES.
Yes
The use of the word “affect” in the note may cause problems with interpretation by users. WECC suggests replacing the term "affect" with “alter”.
Yes
E2 is inconsistent with Section III.c. of the NERC Statement of Compliance Registry Criteria and is in conflict with I2. As written, E2 uses a net capacity threshold of 75MVA, which does not distinguish between a single generating unit and multiple generating units. The threshold in the NERC Statement of Compliance Registry Criteria for a single generating unit is 20MVA. As a result, E2 would appear to exclude generators from 20MVA to 75MVA that serve any amount of retail load behind the meter. WECC recommends replacing “(i) the net capacity provided to the BES does not exceed 75 MVA” with “(i) the net capacity provided to the BES does not exceed the individual or gross nameplate ratings provided in the NERC Statement of Compliance Registry Criteria.” WECC’s recommended change makes E2 consistent with I2 and the SDT’s plan to address generator thresholds in Phase II.
Yes
Yes
Yes
Following are additional comments not covered in previous questions: • Under the section “Effective Dates”: There may be confusion with the statement “Compliance Obligations for Elements included by definition shall begin 24 months after the applicable effective data of the definition.” The phrase “included by definition” can be interpreted broadly. • WECC notes that a generation threshold of 75MVA is specified in Exclusions E1, E2, and E3. WECC believes that generation thresholds for Exclusions should be addressed in Phase II when generation thresholds for Inclusions are being considered.
Individual
Roger Meader
Coos-Curry Electric Cooperative (CCEC)
Yes
The Coos-Curry Electric Cooperative (CCEC) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System (“BES”) that markedly improves both the existing definition and the SDT’s previous proposal. CCEC therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. CCEC strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase “Unless modified by the lists shown below” to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., “all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher”) and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for “facilities used in the local distribution of electric energy.” As the starting point for the BES definition, CCEC supports the use of the phrase “all Transmission Elements” and the qualifying sentence: “This does not include facilities used in the local distribution of electric energy.” This language helps ensure that FERC, NERC, and the Regional Entities (“REs”) will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act (“FPA”). In Section 215(a)(1), Congress unequivocally excluded “facilities used in the local distribution of electric energy” from the keystone “bulk-power system” definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the

high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – "instability, uncontrolled separation, [and] cascading failures," 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). CCEC thanks the SDT for the excellent work to include this sentence. For similar reasons, CCEC believes the use of the phrase "Transmission Elements" as the starting point for the base definition is desirable because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term "Transmission" makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. CCEC recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, CCEC agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, CCEC is prepared to support the BES definition as proposed by the SDT. While CCEC supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, CCEC believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, CCEC will support the SDT's proposal.

Yes

We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations

and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

CCEC supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. CCEC believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the

materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."

Yes

CCEC supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

CCEC supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which we discuss in more detail in our response to

Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

CCEC has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, CCEC believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Finally, CCEC believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. CCEC strongly believes that there should be technical justification for thresholds for this issue and all other issues.

Yes

CCEC continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term "transmission Elements" in the initial paragraph should be changed to "Elements." Radial systems are not transmission systems and including the word "transmission" in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to "generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). We urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," discussed in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II

included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC's Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The "Note" as drafted by the SDT indicates that "a normally open switching device between radial systems" will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, CCEC strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a "note" suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.

Yes

CCEC supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, CCEC urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term "Qualifying Aggregate Generation Resources" or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.

Yes

CCEC strongly supports the exclusion of Local Networks ("LNs") from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. CCEC also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, CCEC supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to "improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system." CCEC supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. CCEC believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a "group of contiguous transmission Elements operated at or above 100kV" the starting point for identifying a LN would be improved by

deleting the term “transmission” from this phrase. This is so because LNs are not used for transmission and the use of the term “transmission Elements” is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word “transmission” if the word is deleted and the Exclusion applies to any “group of Elements operated at 100kV or above” that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term “transmission Elements” is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. CCEC also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: “The LN does not transfer energy originating outside the LN for delivery through the LN.” We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: “The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN.” We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN “transfers energy originating outside the LN for delivery through the LN to loads located within the LN.” We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect “non-retail generation greater than 75 MVA (gross nameplate rating).” For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term “Qualifying Aggregate Generation Resources” or some equivalent. We are also uncertain what is meant by the use of the term “non-retail generation” in subparagraph (a). From context, we believe the SDT considers “non-retail generation” to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer’s own load. We therefore suggest that the SDT replace the term “non-retail generation” with “generation located behind the retail customer’s meter.” Similarly, we are unsure what is meant by the phrase “the LN and its underlying Elements.” We believe the phrase “and its underlying Elements” could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase “the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system.” We believe this phrase more accurately reflects the SDT’s intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. CCEC also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be

BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: "Except in unusual circumstances, power flows only into the LN." Finally, we note that the LN exclusion must not operate in any way as a substitution for the statutory prohibition on including "facilities used in the local distribution of electric energy" in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a "facility used in the local distribution of electric energy," then it is not part of the BES in the first instance, and so consideration of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.

Yes

CCEC supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.

No

CCEC extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. CCEC supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, CCEC is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not

be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that CCEC specifically supports the changes made by the SDT in the “Effective Date” provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. CCEC supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. CCEC also supports the 24-month transition period for the reasons laid out by the SDT.
Individual
Kathleen Goodman
ISO New England Inc
Yes
The second sentence is unclear with respect to its intent. If it’s intended to cover the exclusion described in E3, the sentence is not needed. If it’s intended to mean something else, it is unclear as to what is intended and likely should be deleted.
No
I1 needs to be clarified such that it is clear on whether this includes autotransformers, phase angle regulators, and devices which have a tertiary winding. Using the tertiary winding as an example, it is not clear whether the tertiary winding itself is considered BES, especially if it is serving a radial system as described in E1.
Yes
No
The SDT has interpreted the FERC Directive to revise the BES definition in a manner that goes beyond the mandate of ensuring that the definition encompasses all facilities necessary for operating an interconnected electric transmission network. The SDT states that operation is interpreted as being under both normal and emergency conditions. However, loss of all electric power is the end state condition when all normal and emergency remediating actions have failed to prevent a collapse of the grid. System restoration involves the use of blackstart generators that are not resources necessary for operating the electrical grid but rather a means to recover following (not part of the emergency itself) an extreme emergency. The SDT should simply refer to the current Compliance Registry, which, for now, appears to adequately deal with the issue of how to treat Blackstart resources. I3 states “Blackstart Resources identified in the Transmission Operator’s restoration plan”. This is contrary to the preferred language that is part of the approved ERO Statement of Compliance Registry, III.C.3 that states, “Any generator, regardless of size, that is a blackstart unit material to (emphasis added) and designated as part of a transmission operator entity’s restoration plan”. This language is necessary to distinguish between those Blackstart Resources that are depended upon to restore the BES following an emergency (“Key Facilities”) as compared to those Blackstart Resources that are used to restore power to customer load. Additionally, discussions with others during the preparation of comments have revealed that some interpret this requirement to include the GSU. We do not interpret this in this manner, but this should be clarified to avoid confusion.
No
I4 is unclear as to whether or not the collector system (or system designed primarily for aggregating capacity) itself is BES or just the resource. “Utilizing a system designed primarily for aggregating capacity” needs to be more clearly defined to account for multiple systems that may exist out of one common point. A suggestion would be to modify the end of the sentence to say “connected at any common point.” I4 will allow for significant amounts of dispersed power producing resources to be excluded from the BES. This includes wind resources which are increasing in numbers and having a significant impact on system operations. It does not seem appropriate that having ten 70 MVA (total of 700 MVA) installations each with their own connection to a 115 kV bus should fall outside of the BES. As currently written, they would fall outside of the inclusion if they do not utilize the same collector system. It is unclear whether or not supplemental equipment associated with the dispersed

power producing resources is included in the BES. As an example, many wind resources are being interconnected utilizing supplemental dynamic and static reactive devices which are crucial to the operation of these resources. The dynamic devices are often controlling themselves and static reactive devices, which may or may not be connected above 100 kV. Leaving these devices out of the BES definition seems to be a potential gap.
Yes
No
The term “single point” is not clear. A better explanation is necessary. For example, the same bus in a bus/branch model should suffice as a “single point”. There should not be a requirement to be at the same node as found in a nodal model. The term “a group of contiguous transmission elements” is ambiguous and needs to be clarified. The “Non-retail” qualifier in E1.c) should be deleted. It adds confusion to the exclusion and is not defined.
No
Exclusion E2 is confusing as written and seems counter intuitive. As an example, a 400 MW generator which is behind the meter with a 400 MW load could be excluded. This generator could have a significant impact on the performance of the system and yet it is excluded. As a simple example, loss of the 400 MW generator would require that the 400 MW load be supplied from the system, possibly leading to low voltages and thermal overloads. Additionally, a machine of this size could adversely impact the dynamic response of the system, leading to damping concerns or unit instability. If E2 is to be retained, it is not clear under what load conditions should the load at the facility be measured. Load levels, and resulting net flows to the system, can be significantly different between seasons, time of day, and the status of end user equipment at large industrial/manufacturing sites. The term “Retail Customer Load” needs to be defined. The Balancing Authority should not be included as an entity providing this service. In general the Statement of Compliance Registry has provided the preferred language to use here (Page 9, [Exclusions: second paragraph).
No
E3 could result in many large load pockets being excluded from the BES definition and should be deleted. Assuming that it is retained, we offer the following additional comments. The term “a group of contiguous transmission elements” is ambiguous and needs to be clarified. Please clarify in the exclusion if the flows into the LN as described in E3.b) are pre-contingency flows only. Please clarify the system conditions (time of year, peak or off-peak) that should be considered in determining of flow is only into the LN. The “Non-retail” qualifier in E3.a) should be deleted.
No
The term “retail customer” is unclear and will lead to confusion. This exclusion should be removed as there are many instances where a generator may be using the reactive power device to meet other interconnection requirements and the reactive device should be held to the same BES requirements as the generator.
Yes
There are a number of possible scenarios where an element falls under both an inclusion and exclusion. The definition is unclear as to whether or not this would have the element be BES or not. During the webinar an example was given about a static shunt device meeting the requirements of I5, but is part of a radial network. The response during the webinar was that this would be excluded. If this is correct, it means that an exclusion takes precedence over an inclusion. Is this always the case? This needs to be clarified and stated somewhere in this document. To be consistent with regard to the terms “Operated at 100 kV” and “Connected at 100 kV “, we suggest that reference to generators should state, “Connected at a transmission element operated at 100 kV”. This will avoid confusion in cases where a generator is connected to a transmission element rated at 100 kV but operated at a lower voltage.
Individual
Dave Markham
Central Electric Cooperatve (CEC)
Yes
The Central Electric Cooperative (CEC) believes the SDT continues to make substantial progress

towards a clear and workable definition of the Bulk Electric System ("BES") that markedly improves both the existing definition and the SDT's previous proposal. CEC therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. CEC strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase "Unless modified by the lists shown below" to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., "all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher") and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for "facilities used in the local distribution of electric energy." As the starting point for the BES definition, CEC supports the use of the phrase "all Transmission Elements" and the qualifying sentence: "This does not include facilities used in the local distribution of electric energy." This language helps ensure that FERC, NERC, and the Regional Entities ("REs") will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act ("FPA"). In Section 215(a)(1), Congress unequivocally excluded "facilities used in the local distribution of electric energy" from the keystone "bulk-power system" definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – "instability, uncontrolled separation, [and] cascading failures," 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). CEC thanks the SDT for the excellent work to include this sentence. For similar reasons, CEC believes the use of the phrase "Transmission Elements" as the starting point for the base definition is desirable because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term "Transmission" makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. CEC recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, CEC agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, CEC is prepared to support the BES definition as proposed by the SDT. While CEC supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, CEC believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions

Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, CEC will support the SDT's proposal.

Yes

We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

CEC supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. CEC believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site.

Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific

thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."

Yes

CEC supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

CEC supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which we discuss in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

CEC has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, CEC believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Finally, CEC

believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. CEC strongly believes that there should be technical justification for thresholds for this issue and all other issues.
Yes
CEC continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term “transmission Elements” in the initial paragraph should be changed to “Elements.” Radial systems are not transmission systems and including the word “transmission” in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to “generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)”). We urge the SDT to replace this language with the defined term “Qualifying Aggregate Generation Resources,” discussed in more detail in our response to Question 3. This language will preserve the SDT’s ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC’s Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The “Note” as drafted by the SDT indicates that “a normally open switching device between radial systems” will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, CEC strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a “note” suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.
Yes
CEC supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, CEC urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term “Qualifying Aggregate Generation Resources” or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.
Yes

CEC strongly supports the exclusion of Local Networks ("LNs") from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. CEC also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, CEC supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to "improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system." CEC supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. CEC believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a "group of contiguous transmission Elements operated at or above 100kV" the starting point for identifying a LN would be improved by deleting the term "transmission" from this phrase. This is so because LNs are not used for transmission and the use of the term "transmission Elements" is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word "transmission" if the word is deleted and the Exclusion applies to any "group of Elements operated at 100kV or above" that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term "transmission Elements" is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. CEC also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: "The LN does not transfer energy originating outside the LN for delivery through the LN." We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: "The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN." We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term

"Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is meant by the use of the term "non-retail generation" in subparagraph (a). From context, we believe the SDT considers "non-retail generation" to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer's own load. We therefore suggest that the SDT replace the term "non-retail generation" with "generation located behind the retail customer's meter." Similarly, we are unsure what is meant by the phrase "the LN and its underlying Elements." We believe the phrase "and its underlying Elements" could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase "the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system." We believe this phrase more accurately reflects the SDT's intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. CEC also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: "Except in unusual circumstances, power flows only into the LN." Finally, we note that the LN exclusion must not operate in any way as a substitution for the statutory prohibition on including "facilities used in the local

distribution of electric energy" in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a "facility used in the local distribution of electric energy," then it is not part of the BES in the first instance, and so consideration of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.
Yes
CEC supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.
No
CEC extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. CEC supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, CEC is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that CEC specifically supports the changes made by the SDT in the "Effective Date" provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. CEC supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. CEC also supports the 24-month transition period for the reasons laid out by the SDT.
Individual
Dave Hagen
Clearwater Power Company (CPC)
Yes
The Clearwater Power Company (CPC) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System ("BES") that markedly improves both the existing definition and the SDT's previous proposal. CPC therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. CPC strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase "Unless modified by the lists shown below" to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., "all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher") and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for "facilities used in the local distribution of electric energy." As the starting point for the BES definition, CPC supports the use of the phrase "all Transmission Elements" and the qualifying sentence: "This does not include facilities used in the local distribution of electric energy." This language helps ensure that FERC, NERC, and the Regional Entities ("REs") will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act ("FPA"). In Section 215(a)(1), Congress unequivocally excluded "facilities used in the local distribution of electric energy" from the keystone "bulk-power system" definition. 16 U.S.C.

§ 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – "instability, uncontrolled separation, [and] cascading failures," 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). CPC thanks the SDT for the excellent work to include this sentence. For similar reasons, CPC believes the use of the phrase "Transmission Elements" as the starting point for the base definition is desirable because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term "Transmission" makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. CPC recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, CPC agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, CPC is prepared to support the BES definition as proposed by the SDT. While CPC supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, CPC believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, CPC will support the SDT's proposal.

Yes

We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the

juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

CPC supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. CPC believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a

Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."

Yes

CPC supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

CPC supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e. "resources with aggregate capacity greater than 75 MVA (gross aggregate

nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which we discuss in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

CPC has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, CPC believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Finally, CPC believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. CPC strongly believes that there should be technical justification for thresholds for this issue and all other issues.

Yes

CPC continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term "transmission Elements" in the initial paragraph should be changed to "Elements." Radial systems are not transmission systems and including the word "transmission" in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to "generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). We urge the SDT to replace this language with the defined term "Qualifying Aggregate

Generation Resources," discussed in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC's Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The "Note" as drafted by the SDT indicates that "a normally open switching device between radial systems" will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, CPC strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a "note" suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.

Yes

CPC supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, CPC urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term "Qualifying Aggregate Generation Resources" or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.

Yes

CPC strongly supports the exclusion of Local Networks ("LNs") from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. CPC also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, CPC supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to "improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system." CPC supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. CPC believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core

language of Exclusion 3, we believe the language making a “group of contiguous transmission Elements operated at or above 100kV” the starting point for identifying a LN would be improved by deleting the term “transmission” from this phrase. This is so because LNs are not used for transmission and the use of the term “transmission Elements” is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word “transmission” if the word is deleted and the Exclusion applies to any “group of Elements operated at 100kV or above” that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term “transmission Elements” is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. CPC also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: “The LN does not transfer energy originating outside the LN for delivery through the LN.” We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: “The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN.” We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN “transfers energy originating outside the LN for delivery through the LN to loads located within the LN.” We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect “non-retail generation greater than 75 MVA (gross nameplate rating).” For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term “Qualifying Aggregate Generation Resources” or some equivalent. We are also uncertain what is meant by the use of the term “non-retail generation” in subparagraph (a). From context, we believe the SDT considers “non-retail generation” to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer’s own load. We therefore suggest that the SDT replace the term “non-retail generation” with “generation located behind the retail customer’s meter.” Similarly, we are unsure what is meant by the phrase “the LN and its underlying Elements.” We believe the phrase “and its underlying Elements” could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase “the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system.” We believe this phrase more accurately reflects the SDT’s intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. CPC also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to

re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: "Except in unusual circumstances, power flows only into the LN." Finally, we note that the LN exclusion must not operate in any way as a substitution for the statutory prohibition on including "facilities used in the local distribution of electric energy" in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a "facility used in the local distribution of electric energy," then it is not part of the BES in the first instance, and so consideration of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.

Yes

CPC supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.

No

CPC extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. CPC supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, CPC is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES

Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that CPC specifically supports the changes made by the SDT in the "Effective Date" provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. CPC supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. CPC also supports the 24-month transition period for the reasons laid out by the SDT.
Individual
Eric Lee Christensen
Snohomish County PUD
Yes
The Public Utility District No. 1 of Snohomish County ("SNPD") believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System ("BES") that markedly improves both the existing definition and the SDT's previous proposal. SNPD therefore strongly supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. SNPD strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase "Unless modified by the lists shown below" to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., "all Transmission Elements operated at 100 kV or higher and Real Time and Reactive Power resources connected at 100 kV or higher") and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for Local Distribution Facilities. As the starting point for the BES definition, SNPD supports use of the phrase "all Transmission Elements" and the qualifying sentence: "This does not include facilities used in the local distribution of electric energy." This language helps ensure that FERC, NERC, and the Regional Entities ("REs") will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act ("FPA"). In Section 215(a)(1), Congress unequivocally excluded "facilities used in the local distribution of electric energy" from the keystone "bulk-power system" definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – "instability, uncontrolled separation, [and] cascading failures," 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). For similar reasons, Snohomish believes use of the phrase "Transmission Elements" as the starting point for the base definition is desirable because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the term "Transmission" makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. Snohomish recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to

conduct such an analysis within the time available. Accordingly, Snohomish agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, Snohomish is prepared to support the BES definition as proposed by the SDT. While Snohomish strongly supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Our support for the definition is not contingent upon these changes being adopted. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, Snohomish believes a 200-kV threshold would be more appropriate for WECC than a 100-kV threshold. In addition, a 200-kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view is therefore incorrect. That being said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, Snohomish will support the SDT's proposal and will not further pursue its claims regarding the 200-kV threshold. Finally, we suggest that the SDT address the circumstance when an Element is covered by both an Inclusion and an Exclusion. We note that some of the inclusions already contain language addressing this question. For example, Inclusion 1 indicates that transformers falling within the specified parameters are part of the BES ". . . unless excluded under Exclusions E1 or E3." Where it is not already included, similar language should be included in the other Inclusions and/or Exclusions to explain whether the SDT intends the Inclusions or the Exclusions to predominate in situations where facilities might be covered by both. We suggest clarifying language in our responses to Questions 2 and 5.

Yes

We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100 kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100 kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the

transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

SNPD supports the changes made in Inclusion 2 and believe that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process to examine the technical justification for these thresholds and to establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less due process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little due process. SNPD also believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes to include generation in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100 kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: "For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria." "For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria." The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about

generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Hence, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100 kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100 kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100 kV or above." Finally, as discussed further in our answer to Questions 5 and 6, SNPD believes more clarity may be achieved by collapsing Inclusion 5, addressing Reactive Power resources, and Inclusion 4, which addresses dispersed renewable resources, into a single Inclusion that addresses "power producing resources" (the language used in current Inclusion 4).

Yes

SNPD supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

SNPD supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which is discussed in more detail in our response to Question 3. This language, or some equivalent, will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in

Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a LN. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

SNPD has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Finally, SNPD believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process.

Yes

SNPD continues to support the radial system exclusion, which is necessary as a legal matter, because, for example, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term "transmission Elements" in the initial paragraph should be changed to "Elements." Radial systems are not transmission systems and including the word "transmission" in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to "generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). We urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," discussed in more detail in our response to Question 3. This language, or some equivalent, will preserve the SDT's ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC's Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The "Note" as drafted by the SDT indicates that "a normally open switching device between radial systems" will not serve to disqualify the Radial from exclusion under Exclusion 1. As noted above, SNPD strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d),

rather than a note, because treatment as a “note” suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: "d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion." This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.

Yes

SNPD supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, SNPD urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term “Qualifying Aggregate Generation Resources” or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.

Yes

SNPD strongly supports the categorical exclusion of Local Networks (“LNs”) from the BES. We believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement, discussed in our response to Question 1, to exclude all facilities used in the local distribution of electric power. LNs are, of course, probably the most common form of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers will ultimately benefit from the path chosen by the SDT. SNPD also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, SNPD supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to “improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system.” Snohomish supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. SNPD believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a “group of contiguous transmission Elements operated at or above 100 kV” the starting point for identifying a LN would be improved by deleting the term “transmission” from this phrase. This is so because LNs are not used for transmission and the use of the term “transmission Elements” is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word “transmission” if the word is deleted and the Exclusion applies to any “group of Elements operated at 100 kV or above” that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the

term “transmission Elements” is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. SNPD also believes that subparagraphs (a) and (b) are redundant in the sense that whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LDN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: “The LN does not transfer energy originating outside the LN for delivery through the LN.” We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: “The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN.” We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN “transfers energy originating outside the LN for delivery through the LN to loads located within the LN.” We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect “non-retail generation greater than 75 MVA (gross nameplate rating).” For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term “Qualifying Aggregate Generation Resources” or some equivalent. We are also uncertain what is meant by the use of the term “non-retail generation” in subparagraph (a). From context, we believe the SDT considers “non-retail generation” to mean generation that is used by retail customers located within a LN rather than being exported and sold on wholesale markets outside the LN. We therefore suggest that the SDT replace the phrase “non-retail generation” with the phrase “generation sold in wholesale markets and transmitted outside the LN.” Similarly, we are unsure what is meant by the phrase “the LN and its underlying Elements.” We believe the phrase “and its underlying Elements” could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase “the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system.” We believe this phrase more accurately reflects the SDT’s intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. Finally, SNPD believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC’s Standards Drafting Team for Project 2010-07 and its predecessor, the “GO-TO Task Force” were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability

standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as “Transmission” and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities “are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system.” White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators “would do little, if anything, to improve the reliability of the Bulk Electric System,” especially “when compared to the operation of the equipment that actually produces electricity – the generation equipment itself.” Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as “BES” simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: “Except in unusual circumstances, power flows only into the LN.”

Yes

Yes, SNPD supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.

No

SNPD extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. SNPD strongly supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, SNPD is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that SNPD specifically supports the changes made by the SDT in the “Effective Date” provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. SNPD supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. SNPD also supports the 24-month transition period for the reasons laid out by the SDT.

Group

Chris Higgins
Transmission Reliability Program
Yes
Yes
Yes
BPA agrees with the I2 changes and feels that they are excellent.
Yes
Yes
BPA suggests adding, “Including generating terminals of the high side” as clarifying language to the end of the sentence. (Specifically where the 100kV is to be measured as clarified in I2). BPA believes that Inclusion 4 is not intended to include each individual wind turbine/generator unit in a wind farm as a BES element, but rather to include the point at which the aggregation becomes large enough to meet the aggregate capacity threshold of 75 MVA.
Yes
No
BPA believes that a system left connected in a network configuration, via use of a normally open switch for temporary network connection, without the protections afforded through the standards that apply to BES should be limited to less than 24 hours. BPA believes that the term “non-retail generation” in E1(c) should be clearly defined. In addition, BPA believes that there needs to be a means to isolate the radial system from the BES during a fault on the radial system by means of a automatic fault interrupting device. Automatic fault interrupting device should be a defined term.
Yes
BPA believes that if E2 is intended to exclude behind-the-meter generation, the phrase “on the customer’s side of the retail meter” should immediately follow “generating units” in the first line. Otherwise, the phrase could be seen as modifying “retail customer Load.”
No
BPA has several concerns regarding Exclusion E3. First, BPA strongly believes that Exclusion E3 must retain the requirement that the local network (LN) be separable from the BES by an automatic fault interrupting device wherever the LN interconnects with the BES. BPA believes that this is necessary in order to protect both the BES and the LN during faults, especially if there is any possibility that backfeed could occur. BPA recommends retaining the original language: Separable by automatic fault interrupting devices: Wherever connected to the BES, the LN must be connected through automatic fault interrupting devices. In addition, as stated in our comments in May, 2011, “automatic fault interrupting device” should be a defined term. BPA strongly believes that Exclusion E3 should not be allowed for any facilities above 200kV instead of the 300kV limit in shown in the current proposal. Networks operated above 200kV have significant fault duties, carry much more power, and have a greater potential for cascading if something does not operate properly than networks operated below 200kV. Therefore, BPA believes that these networks should be part of the BES. BPA believes the term “non-retail generation” in E3(a) should also be defined.
Yes
No
Individual
Roman Gillen
Consumer's Power Inc.
Yes
The Consumers Power (CPI) believes the SDT continues to make substantial progress towards a clear

and workable definition of the Bulk Electric System ("BES") that markedly improves both the existing definition and the SDT's previous proposal. CPI therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. CPI strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase "Unless modified by the lists shown below" to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., "all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher") and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for "facilities used in the local distribution of electric energy." As the starting point for the BES definition, CPI supports the use of the phrase "all Transmission Elements" and the qualifying sentence: "This does not include facilities used in the local distribution of electric energy." This language helps ensure that FERC, NERC, and the Regional Entities ("REs") will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act ("FPA"). In Section 215(a)(1), Congress unequivocally excluded "facilities used in the local distribution of electric energy" from the keystone "bulk-power system" definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – "instability, uncontrolled separation, [and] cascading failures," 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). CPI thanks the SDT for the excellent work to include this sentence. For similar reasons, CPI believes the use of the phrase "Transmission Elements" as the starting point for the base definition is desirable because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term "Transmission" makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. CPI recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, CPI agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, CPI is prepared to support the BES definition as proposed by the SDT. While CPI supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, CPI believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions

Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, CPI will support the SDT's proposal.

Yes

We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

CPI supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. CPI believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site.

Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific

thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."

Yes

CPI supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

CPI supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which we discuss in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

CPI has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, CPI believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Finally, CPI

believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. CPI strongly believes that there should be technical justification for thresholds for this issue and all other issues.
Yes
CPI continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term “transmission Elements” in the initial paragraph should be changed to “Elements.” Radial systems are not transmission systems and including the word “transmission” in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to “generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)”). We urge the SDT to replace this language with the defined term “Qualifying Aggregate Generation Resources,” discussed in more detail in our response to Question 3. This language will preserve the SDT’s ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC’s Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The “Note” as drafted by the SDT indicates that “a normally open switching device between radial systems” will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, CPI strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a “note” suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.
Yes
CPI supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, CPI urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term “Qualifying Aggregate Generation Resources” or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.
Yes

CPI strongly supports the exclusion of Local Networks ("LNs") from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. CPI also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, CPI supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to "improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system." CPI supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. CPI believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a "group of contiguous transmission Elements operated at or above 100kV" the starting point for identifying a LN would be improved by deleting the term "transmission" from this phrase. This is so because LNs are not used for transmission and the use of the term "transmission Elements" is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word "transmission" if the word is deleted and the Exclusion applies to any "group of Elements operated at 100kV or above" that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term "transmission Elements" is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. CPI also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: "The LN does not transfer energy originating outside the LN for delivery through the LN." We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: "The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN." We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term

"Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is meant by the use of the term "non-retail generation" in subparagraph (a). From context, we believe the SDT considers "non-retail generation" to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer's own load. We therefore suggest that the SDT replace the term "non-retail generation" with "generation located behind the retail customer's meter." Similarly, we are unsure what is meant by the phrase "the LN and its underlying Elements." We believe the phrase "and its underlying Elements" could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase "the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system." We believe this phrase more accurately reflects the SDT's intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. CPI also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: "Except in unusual circumstances, power flows only into the LN." Finally, we note that the LN exclusion must not operate in any way as a substitution for the statutory prohibition on including "facilities used in the local

distribution of electric energy" in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a "facility used in the local distribution of electric energy," then it is not part of the BES in the first instance, and so consideration of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.
Yes
CPI supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.
No
CPI extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. CPI supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, CPI is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that CPI specifically supports the changes made by the SDT in the "Effective Date" provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. CPI supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. CPI also supports the 24-month transition period for the reasons laid out by the SDT.
Individual
Dave Sabala
Douglas Electric Cooperative (DEC)
Yes
The Douglas Electric Cooperative (DEC) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System ("BES") that markedly improves both the existing definition and the SDT's previous proposal. DEC therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. DEC strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase "Unless modified by the lists shown below" to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., "all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher") and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for "facilities used in the local distribution of electric energy." As the starting point for the BES definition, DEC supports the use of the phrase "all Transmission Elements" and the qualifying sentence: "This does not include facilities used in the local distribution of electric energy." This language helps ensure that FERC, NERC, and the Regional Entities ("REs") will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act ("FPA"). In Section 215(a)(1), Congress unequivocally excluded "facilities used in the local distribution of electric energy" from the keystone "bulk-power system" definition. 16 U.S.C.

§ 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – "instability, uncontrolled separation, [and] cascading failures," 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). DEC thanks the SDT for the excellent work to include this sentence. For similar reasons, DEC believes the use of the phrase "Transmission Elements" as the starting point for the base definition is desirable because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term "Transmission" makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. DEC recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, DEC agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, DEC is prepared to support the BES definition as proposed by the SDT. While DEC supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, DEC believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, DEC will support the SDT's proposal.

Yes

We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the

juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

DEC supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. DEC believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a

Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."
Yes
DEC supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.
Yes
DEC supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e. "resources with aggregate capacity greater than 75 MVA (gross aggregate

nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which we discuss in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

DEC has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, DEC believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Finally, DEC believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. DEC strongly believes that there should be technical justification for thresholds for this issue and all other issues.

Yes

DEC continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term "transmission Elements" in the initial paragraph should be changed to "Elements." Radial systems are not transmission systems and including the word "transmission" in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to "generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). We urge the SDT to replace this language with the defined term "Qualifying Aggregate

Generation Resources," discussed in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC's Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The "Note" as drafted by the SDT indicates that "a normally open switching device between radial systems" will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, DEC strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a "note" suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.
Yes
DEC supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, DEC urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term "Qualifying Aggregate Generation Resources" or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.
Yes
DEC strongly supports the exclusion of Local Networks ("LNs") from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. DEC also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, DEC supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to "improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system." DEC supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. DEC believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core

language of Exclusion 3, we believe the language making a “group of contiguous transmission Elements operated at or above 100kV” the starting point for identifying a LN would be improved by deleting the term “transmission” from this phrase. This is so because LNs are not used for transmission and the use of the term “transmission Elements” is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word “transmission” if the word is deleted and the Exclusion applies to any “group of Elements operated at 100kV or above” that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term “transmission Elements” is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. DEC also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: “The LN does not transfer energy originating outside the LN for delivery through the LN.” We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: “The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN.” We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN “transfers energy originating outside the LN for delivery through the LN to loads located within the LN.” We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect “non-retail generation greater than 75 MVA (gross nameplate rating).” For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term “Qualifying Aggregate Generation Resources” or some equivalent. We are also uncertain what is meant by the use of the term “non-retail generation” in subparagraph (a). From context, we believe the SDT considers “non-retail generation” to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer’s own load. We therefore suggest that the SDT replace the term “non-retail generation” with “generation located behind the retail customer’s meter.” Similarly, we are unsure what is meant by the phrase “the LN and its underlying Elements.” We believe the phrase “and its underlying Elements” could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase “the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system.” We believe this phrase more accurately reflects the SDT’s intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. DEC also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to

re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: "Except in unusual circumstances, power flows only into the LN." Finally, we note that the LN exclusion must not operate in any way as a substitution for the statutory prohibition on including "facilities used in the local distribution of electric energy" in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a "facility used in the local distribution of electric energy," then it is not part of the BES in the first instance, and so consideration of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.

Yes

DEC supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.

No

DEC extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. DEC supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, DEC is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES

Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that DEC specifically supports the changes made by the SDT in the "Effective Date" provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. DEC supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. DEC also supports the 24-month transition period for the reasons laid out by the SDT.

Individual

Bryan Case

Fall River Rural Electric Cooperative (FALL)

Yes

The Fall River Rural Electric Cooperative (FALL) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System ("BES") that markedly improves both the existing definition and the SDT's previous proposal. FALL therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. FALL strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase "Unless modified by the lists shown below" to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., "all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher") and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for "facilities used in the local distribution of electric energy." As the starting point for the BES definition, FALL supports the use of the phrase "all Transmission Elements" and the qualifying sentence: "This does not include facilities used in the local distribution of electric energy." This language helps ensure that FERC, NERC, and the Regional Entities ("REs") will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act ("FPA"). In Section 215(a)(1), Congress unequivocally excluded "facilities used in the local distribution of electric energy" from the keystone "bulk-power system" definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – "instability, uncontrolled separation, [and] cascading failures," 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). FALL thanks the SDT for the excellent work to include this sentence. For similar reasons, FALL believes the use of the phrase "Transmission Elements" as the starting point for the base definition is desirable because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term "Transmission" makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. FALL recognizes

that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, FALL agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, FALL is prepared to support the BES definition as proposed by the SDT. While FALL supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, FALL believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, FALL will support the SDT's proposal.

Yes

We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

FALL supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES

Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. FALL believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and

clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."

Yes

FALL supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

FALL supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which we discuss in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be

established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

FALL has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, FALL believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Finally, FALL believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. FALL strongly believes that there should be technical justification for thresholds for this issue and all other issues.

Yes

FALL continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term "transmission Elements" in the initial paragraph should be changed to "Elements." Radial systems are not transmission systems and including the word "transmission" in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to "generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). We urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," discussed in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC's Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The "Note" as drafted by the SDT indicates that "a normally open switching device between radial systems" will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, FALL strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a "note" suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.

Yes
FALL supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, FALL urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term “Qualifying Aggregate Generation Resources” or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.
Yes
FALL strongly supports the exclusion of Local Networks (“LNs”) from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. FALL also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, FALL supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to “improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system.” FALL supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. FALL believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a “group of contiguous transmission Elements operated at or above 100kV” the starting point for identifying a LN would be improved by deleting the term “transmission” from this phrase. This is so because LNs are not used for transmission and the use of the term “transmission Elements” is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word “transmission” if the word is deleted and the Exclusion applies to any “group of Elements operated at 100kV or above” that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term “transmission Elements” is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. FALL also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and

dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: "The LN does not transfer energy originating outside the LN for delivery through the LN." We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: "The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN." We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term "Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is meant by the use of the term "non-retail generation" in subparagraph (a). From context, we believe the SDT considers "non-retail generation" to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer's own load. We therefore suggest that the SDT replace the term "non-retail generation" with "generation located behind the retail customer's meter." Similarly, we are unsure what is meant by the phrase "the LN and its underlying Elements." We believe the phrase "and its underlying Elements" could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase "the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system." We believe this phrase more accurately reflects the SDT's intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. FALL also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the

Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: "Except in unusual circumstances, power flows only into the LN." Finally, we note that the LN exclusion must not operate in any way as a substitution for the statutory prohibition on including "facilities used in the local distribution of electric energy" in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a "facility used in the local distribution of electric energy," then it is not part of the BES in the first instance, and so consideration of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.

Yes

FALL supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.

No

FALL extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. FALL supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, FALL is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that FALL specifically supports the changes made by the SDT in the "Effective Date" provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. FALL supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. FALL also supports the 24-month transition period for the reasons laid out by the SDT.

Individual

Rick Crinklaw

Lane Electric Cooperative (LEC)

Yes

The Lane Electric Cooperative (LEC) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System ("BES") that markedly improves both the existing definition and the SDT's previous proposal. LEC therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. LEC strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase "Unless modified by the lists shown below" to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., "all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher") and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for "facilities used in the local distribution of electric energy." As the starting point for the BES definition, LEC supports the use of the phrase "all Transmission Elements" and the qualifying sentence: "This does not include facilities used in the local distribution of electric energy." This language helps ensure that FERC, NERC, and the Regional Entities ("REs") will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act ("FPA"). In Section 215(a)(1), Congress unequivocally excluded "facilities used in the local distribution of electric energy" from the keystone "bulk-power system" definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – "instability, uncontrolled separation, [and] cascading failures," 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). LEC thanks the SDT for the excellent work to include this sentence. For similar reasons, LEC believes the use of the phrase "Transmission Elements" as the starting point for the base definition is desirable because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term "Transmission" makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. LEC recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, LEC agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, LEC is prepared to support the BES definition as proposed by the SDT. While LEC supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, LEC believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the

core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, LEC will support the SDT's proposal.
Yes
We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."
Yes
LEC supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. LEC believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is

currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the

SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."

Yes

LEC supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

LEC supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which we discuss in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

LEC has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, LEC believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be

subject to the same technical analysis that will cover generators in the Phase II process. Finally, LEC believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. LEC strongly believes that there should be technical justification for thresholds for this issue and all other issues.

Yes

LEC continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term "transmission Elements" in the initial paragraph should be changed to "Elements." Radial systems are not transmission systems and including the word "transmission" in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to "generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). We urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," discussed in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC's Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The "Note" as drafted by the SDT indicates that "a normally open switching device between radial systems" will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, LEC strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a "note" suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.

Yes

LEC supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, LEC urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term "Qualifying Aggregate Generation Resources" or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.

Yes

LEC strongly supports the exclusion of Local Networks ("LNs") from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. LEC also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, LEC supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to "improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system." LEC supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. LEC believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a "group of contiguous transmission Elements operated at or above 100kV" the starting point for identifying a LN would be improved by deleting the term "transmission" from this phrase. This is so because LNs are not used for transmission and the use of the term "transmission Elements" is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word "transmission" if the word is deleted and the Exclusion applies to any "group of Elements operated at 100kV or above" that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term "transmission Elements" is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. LEC also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: "The LN does not transfer energy originating outside the LN for delivery through the LN." We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: "The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN." We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and

7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term "Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is meant by the use of the term "non-retail generation" in subparagraph (a). From context, we believe the SDT considers "non-retail generation" to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer's own load. We therefore suggest that the SDT replace the term "non-retail generation" with "generation located behind the retail customer's meter." Similarly, we are unsure what is meant by the phrase "the LN and its underlying Elements." We believe the phrase "and its underlying Elements" could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase "the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system." We believe this phrase more accurately reflects the SDT's intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. LEC also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: "Except in unusual circumstances, power flows only into the LN." Finally, we note that the LN exclusion must not operate

in any way as a substitution for the statutory prohibition on including “facilities used in the local distribution of electric energy” in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a “facility used in the local distribution of electric energy,” then it is not part of the BES in the first instance, and so consideration of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.
Yes
LEC supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.
No
LEC extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. LEC supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, LEC is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that LEC specifically supports the changes made by the SDT in the “Effective Date” provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. LEC supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. LEC also supports the 24-month transition period for the reasons laid out by the SDT.
Individual
Michael Henry
Lincoln Electric Cooperative (LEC)
Yes
The Lincoln Electric Cooperative (LEC) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System (“BES”) that markedly improves both the existing definition and the SDT’s previous proposal. LEC therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. LEC strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase “Unless modified by the lists shown below” to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., “all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher”) and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for “facilities used in the local distribution of electric energy.” As the starting point for the BES definition, LEC supports the use of the phrase “all Transmission Elements” and the qualifying sentence: “This does not include facilities used in the local distribution of electric energy.” This language helps ensure that FERC, NERC, and the Regional Entities (“REs”) will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act (“FPA”). In Section 215(a)(1), Congress unequivocally excluded “facilities used in

the local distribution of electric energy" from the keystone "bulk-power system" definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – "instability, uncontrolled separation, [and] cascading failures," 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). LEC thanks the SDT for the excellent work to include this sentence. For similar reasons, LEC believes the use of the phrase "Transmission Elements" as the starting point for the base definition is desirable because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term "Transmission" makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. LEC recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, LEC agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, LEC is prepared to support the BES definition as proposed by the SDT. While LEC supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, LEC believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, LEC will support the SDT's proposal.

Yes

We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is

necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

LEC supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. LEC believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross

nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."

Yes

LEC supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

LEC supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA

generation threshold (i.e, “resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)”). Instead, we urge the SDT to replace this language with the defined term “Qualifying Aggregate Generation Resources,” which we discuss in more detail in our response to Question 3. This language will preserve the SDT’s ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT’s stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a “collector system” and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase “. . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2.” This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

LEC has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are “power producing resources” and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses “power producing devices.” Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, LEC believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Finally, LEC believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. LEC strongly believes that there should be technical justification for thresholds for this issue and all other issues.

Yes

LEC continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term “transmission Elements” in the initial paragraph should be changed to “Elements.” Radial systems are not transmission systems and including the word “transmission” in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to “generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate

rating)"). We urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," discussed in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC's Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The "Note" as drafted by the SDT indicates that "a normally open switching device between radial systems" will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, LEC strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a "note" suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.

Yes

LEC supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, LEC urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term "Qualifying Aggregate Generation Resources" or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.

Yes

LEC strongly supports the exclusion of Local Networks ("LNs") from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. LEC also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, LEC supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to "improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system." LEC supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. LEC believes further improvement of the

language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a "group of contiguous transmission Elements operated at or above 100kV" the starting point for identifying a LN would be improved by deleting the term "transmission" from this phrase. This is so because LNs are not used for transmission and the use of the term "transmission Elements" is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word "transmission" if the word is deleted and the Exclusion applies to any "group of Elements operated at 100kV or above" that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term "transmission Elements" is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. LEC also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: "The LN does not transfer energy originating outside the LN for delivery through the LN." We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: "The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN." We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term "Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is meant by the use of the term "non-retail generation" in subparagraph (a). From context, we believe the SDT considers "non-retail generation" to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer's own load. We therefore suggest that the SDT replace the term "non-retail generation" with "generation located behind the retail customer's meter." Similarly, we are unsure what is meant by the phrase "the LN and its underlying Elements." We believe the phrase "and its underlying Elements" could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase "the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system." We believe this phrase more accurately reflects the SDT's intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. LEC also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we

believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: "Except in unusual circumstances, power flows only into the LN." Finally, we note that the LN exclusion must not operate in any way as a substitution for the statutory prohibition on including "facilities used in the local distribution of electric energy" in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a "facility used in the local distribution of electric energy," then it is not part of the BES in the first instance, and so consideration of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.

Yes

LEC supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.

No

LEC extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. LEC supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, LEC is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team

will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that LEC specifically supports the changes made by the SDT in the "Effective Date" provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. LEC supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. LEC also supports the 24-month transition period for the reasons laid out by the SDT.

Individual

Jon Shelby

Northern Lights Inc. (NLI)

Yes

The Northern Lights (NLI) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System ("BES") that markedly improves both the existing definition and the SDT's previous proposal. NLI therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. NLI strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase "Unless modified by the lists shown below" to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., "all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher") and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for "facilities used in the local distribution of electric energy." As the starting point for the BES definition, NLI supports the use of the phrase "all Transmission Elements" and the qualifying sentence: "This does not include facilities used in the local distribution of electric energy." This language helps ensure that FERC, NERC, and the Regional Entities ("REs") will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act ("FPA"). In Section 215(a)(1), Congress unequivocally excluded "facilities used in the local distribution of electric energy" from the keystone "bulk-power system" definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – "instability, uncontrolled separation, [and] cascading failures," 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). NLI thanks the SDT for the excellent work to include this sentence. For similar reasons, NLI believes the use of the phrase "Transmission Elements" as the starting point for the base definition is desirable because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term "Transmission" makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an

analysis would be conducted as part of the current standards development process. NLI recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, NLI agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, NLI is prepared to support the BES definition as proposed by the SDT. While NLI supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, NLI believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, NLI will support the SDT's proposal.

Yes

We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

NLI supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the

BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. NLI believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be

incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."

Yes

NLI supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

NLI supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which we discuss in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be

established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

NLI has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, NLI believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Finally, NLI believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. NLI strongly believes that there should be technical justification for thresholds for this issue and all other issues.

Yes

NLI continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term "transmission Elements" in the initial paragraph should be changed to "Elements." Radial systems are not transmission systems and including the word "transmission" in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to "generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). We urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," discussed in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC's Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The "Note" as drafted by the SDT indicates that "a normally open switching device between radial systems" will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, NLI strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a "note" suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.

Yes
NLI supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, NLI urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term “Qualifying Aggregate Generation Resources” or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.
Yes
NLI strongly supports the exclusion of Local Networks (“LNs”) from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. NLI also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, NLI supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to “improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system.” NLI supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. NLI believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a “group of contiguous transmission Elements operated at or above 100kV” the starting point for identifying a LN would be improved by deleting the term “transmission” from this phrase. This is so because LNs are not used for transmission and the use of the term “transmission Elements” is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word “transmission” if the word is deleted and the Exclusion applies to any “group of Elements operated at 100kV or above” that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term “transmission Elements” is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. NLI also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and

dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: "The LN does not transfer energy originating outside the LN for delivery through the LN." We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: "The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN." We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term "Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is meant by the use of the term "non-retail generation" in subparagraph (a). From context, we believe the SDT considers "non-retail generation" to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer's own load. We therefore suggest that the SDT replace the term "non-retail generation" with "generation located behind the retail customer's meter." Similarly, we are unsure what is meant by the phrase "the LN and its underlying Elements." We believe the phrase "and its underlying Elements" could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase "the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system." We believe this phrase more accurately reflects the SDT's intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. NLI also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011).

Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: "Except in unusual circumstances, power flows only into the LN." Finally, we note that the LN exclusion must not operate in any way as a substitution for the statutory prohibition on including "facilities used in the local distribution of electric energy" in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a "facility used in the local distribution of electric energy," then it is not part of the BES in the first instance, and so consideration of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.
Yes
NLI supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.
No
NLI extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. NLI supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, NLI is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that NLI specifically supports the changes made by the SDT in the "Effective Date" provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. NLI supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. NLI also supports the 24-month transition period for the reasons laid out by the SDT.
Individual
Randy MacDonald
NBPT

Yes
• When an exclusion and inclusion principles overlap which takes precedence? For example I5 may be excluded if in a LN (E3) • The Local Network Exclusion criterion does not appear to consider voltage support and the effects of shifting of load or impacts due to a loss of load. The 75 MW generation threshold has no technical basis. The LN exclusion should allow for studies demonstrating no through flow benefit regardless if there is. • 75 MW Generation has no technical justification. • Black Start resources should not be included in all GO/GOP standards except for those standards specific to black start units.
Individual
Ray Ellis
Okanogan County Electric Cooperative (OCEC)
Yes
The Okanogan County Electric Cooperative (OCEC) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System (“BES”) that markedly improves both the existing definition and the SDT’s previous proposal. OCEC therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. OCEC strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase “Unless modified by the lists shown below” to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., “all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher”) and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for “facilities used in the local distribution of electric energy.” As the starting point for the BES definition, OCEC supports the use of the phrase “all Transmission Elements” and the qualifying sentence: “This does not include facilities used in the local distribution of electric energy.” This language helps ensure that FERC, NERC, and the Regional Entities (“REs”) will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act (“FPA”). In Section 215(a)(1), Congress unequivocally excluded “facilities used in the local distribution of electric energy” from the keystone “bulk-power system” definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – “instability, uncontrolled separation, [and] cascading failures,” 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). OCEC thanks the SDT for the excellent work to include this sentence. For similar reasons, OCEC believes the use of the phrase “Transmission Elements” as the starting point for the base definition is desirable because both “Transmission” and “Elements” are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term “Transmission” makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards

development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. OCEC recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, OCEC agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, OCEC is prepared to support the BES definition as proposed by the SDT. While OCEC supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, OCEC believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, OCEC will support the SDT's proposal.

Yes

We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes
OCEC supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. OCEC believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to

allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."
Yes
OCEC supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.
Yes
OCEC supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which we discuss in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit.

causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

OCEC has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, OCEC believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Finally, OCEC believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. OCEC strongly believes that there should be technical justification for thresholds for this issue and all other issues.

Yes

OCEC continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term "transmission Elements" in the initial paragraph should be changed to "Elements." Radial systems are not transmission systems and including the word "transmission" in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to "generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). We urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," discussed in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC's Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The "Note" as drafted by the SDT indicates that "a normally open switching device between radial systems" will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, OCEC strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a "note" suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between

radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.

Yes

OCEC supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, OCEC urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term “Qualifying Aggregate Generation Resources” or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.

Yes

OCEC strongly supports the exclusion of Local Networks (“LNs”) from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. OCEC also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, OCEC supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to “improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system.” OCEC supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. OCEC believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a “group of contiguous transmission Elements operated at or above 100kV” the starting point for identifying a LN would be improved by deleting the term “transmission” from this phrase. This is so because LNs are not used for transmission and the use of the term “transmission Elements” is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word “transmission” if the word is deleted and the Exclusion applies to any “group of Elements operated at 100kV or above” that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term “transmission Elements” is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. OCEC also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects

more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: "The LN does not transfer energy originating outside the LN for delivery through the LN." We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: "The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN." We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term "Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is meant by the use of the term "non-retail generation" in subparagraph (a). From context, we believe the SDT considers "non-retail generation" to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer's own load. We therefore suggest that the SDT replace the term "non-retail generation" with "generation located behind the retail customer's meter." Similarly, we are unsure what is meant by the phrase "the LN and its underlying Elements." We believe the phrase "and its underlying Elements" could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase "the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system." We believe this phrase more accurately reflects the SDT's intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. OCEC also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task

Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: "Except in unusual circumstances, power flows only into the LN." Finally, we note that the LN exclusion must not operate in any way as a substitution for the statutory prohibition on including "facilities used in the local distribution of electric energy" in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a "facility used in the local distribution of electric energy," then it is not part of the BES in the first instance, and so consideration of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.

Yes

OCEC supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.

No

OCEC extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. OCEC supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, OCEC is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that OCEC specifically supports the changes made by the SDT in the "Effective Date" provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. OCEC supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. OCEC also supports the 24-month transition period for the reasons laid out by the SDT.

Individual
Donald Jones
Texas Reliability Entity
No
We feel that the Cranking Path should be included in the BES definition. Inclusion of the Cranking Path is vital to a functional, sustainable and reliable system restoration (and restoration plan) regardless of where the Cranking Path is located. CIP-002-4 Attachment 1 recognizes the critical nature of the Cranking Path.
No
There should be language that includes UFLS, UVLS, or load fully removable for Reserves even in a local network to avoid a lapse in reliability in operation of the BES. Even if it is to be included in any Phase 2 work, it should be mentioned here to avoid gaps.
Yes
(1) It is unclear exactly what is intended by “non-retail generation” in Exclusion E1(c). We suggest that the term be explained or defined in the BES definition or in a collateral document. This term does not have a commonly understood unambiguous meaning in our Region. (2) Phase 2 has to be completed or explicitly defined/scoped to fully capture all of the components necessary for reliable operation of the BES.
Individual
Diane Barney
New York State Dept of Public Service
No
The core definition is still deficient due to a lack of technical support for basing the BES definition on 100 kV and for lack of any cost/benefit analysis.
No
• I1 lacks specificity that can lead to confusion and required clarifications. Suggested wording change: All transformers (including auto-transformers, voltage regulators, and phase angle regulators and all windings) with primary and secondary terminals operated at or above 100 kV, and generator step-up (GSU) transformers with one terminal operated at or above 100 kV, unless excluded by E1 or E3.
No
In I2, there is a reference to the Statement of Compliance Registry Criteria. However, the Statement references the BES definition. This circular logic results in a fatally flawed definition. The statement reference should be replaced with the actual intended words.
No
I4 reference to a “common point” lacks clarity that can lead to confusion and required clarifications. Suggested wording change: … connected at a common point through a dedicated step-up transformer with a high-side voltage of 100 kV or above.”
No
I5 – which has been newly added and significantly expands the BES definition – should be dropped due to lack of technical justification.

Yes
• Per NERC's obligations under the Energy Power Act of 2005 to provide FERC technical advice, no technical justification has been provided for basing the BES definition on the 100 kV and MVA thresholds. • No cost analysis on either the reliability benefits of the overall definition or on the implementation plan has been performed to determine whether the likely high cost of the definition to ratepayers is justified. • The definition of the BES should be the driver for the application of all other NERC reliability standards and criteria. The definition uses the Statement of Compliance Registry Criteria as a driver of the definition when the reverse should be taking place; contents of the Statement should be driven by the BES definition.
Individual
Rick Paschall
Pacific Northwest Generating Cooperative (PNGC)
Yes
The Pacific Northwest Generating Cooperative (PNGC) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System ("BES") that markedly improves both the existing definition and the SDT's previous proposal. PNGC therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. PNGC strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase "Unless modified by the lists shown below" to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., "all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher") and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for "facilities used in the local distribution of electric energy." As the starting point for the BES definition, PNGC supports the use of the phrase "all Transmission Elements" and the qualifying sentence: "This does not include facilities used in the local distribution of electric energy." This language helps ensure that FERC, NERC, and the Regional Entities ("REs") will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act ("FPA"). In Section 215(a)(1), Congress unequivocally excluded "facilities used in the local distribution of electric energy" from the keystone "bulk-power system" definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – "instability, uncontrolled separation, [and] cascading failures," 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). PNGC thanks the SDT for the excellent work to include this sentence. For similar reasons, PNGC believes the use of the phrase "Transmission Elements" as the starting point for the base definition is desirable because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term "Transmission" makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. PNGC recognizes

that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, PNGC agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, PNGC is prepared to support the BES definition as proposed by the SDT. While PNGC supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, PNGC believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, PNGC will support the SDT's proposal.

Yes

We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

PNGC supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES

Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. PNGC believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and

clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."

Yes

PNGC supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

PNGC supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which we discuss in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be

established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

PNGC has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, PNGC believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Finally, PNGC believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. PNGC strongly believes that there should be technical justification for thresholds for this issue and all other issues.

Yes

PNGC continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term "transmission Elements" in the initial paragraph should be changed to "Elements." Radial systems are not transmission systems and including the word "transmission" in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to "generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). We urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," discussed in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC's Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The "Note" as drafted by the SDT indicates that "a normally open switching device between radial systems" will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, PNGC strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a "note" suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.

Yes
PNGC supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, PNGC urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term “Qualifying Aggregate Generation Resources” or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.
Yes
PNGC strongly supports the exclusion of Local Networks (“LNs”) from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. PNGC also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, PNGC supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to “improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system.” PNGC supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. PNGC believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a “group of contiguous transmission Elements operated at or above 100kV” the starting point for identifying a LN would be improved by deleting the term “transmission” from this phrase. This is so because LNs are not used for transmission and the use of the term “transmission Elements” is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word “transmission” if the word is deleted and the Exclusion applies to any “group of Elements operated at 100kV or above” that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term “transmission Elements” is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. PNGC also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and

dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: "The LN does not transfer energy originating outside the LN for delivery through the LN." We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: "The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN." We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term "Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is meant by the use of the term "non-retail generation" in subparagraph (a). From context, we believe the SDT considers "non-retail generation" to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer's own load. We therefore suggest that the SDT replace the term "non-retail generation" with "generation located behind the retail customer's meter." Similarly, we are unsure what is meant by the phrase "the LN and its underlying Elements." We believe the phrase "and its underlying Elements" could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase "the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system." We believe this phrase more accurately reflects the SDT's intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. PNGC also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the

Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: "Except in unusual circumstances, power flows only into the LN." Finally, we note that the LN exclusion must not operate in any way as a substitution for the statutory prohibition on including "facilities used in the local distribution of electric energy" in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a "facility used in the local distribution of electric energy," then it is not part of the BES in the first instance, and so consideration of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.
Yes
PNGC supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.
No
PNGC extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. PNGC supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, PNGC is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that PNGC specifically supports the changes made by the SDT in the "Effective Date" provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. PNGC supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. PNGC also supports the 24-month transition period for the reasons laid out by the SDT.
Individual
Heber Carpenter
Raft River Rural Electric Cooperative (RAFT)
Yes

The Raft River Rural Electric Cooperative (RAFT) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System ("BES") that markedly improves both the existing definition and the SDT's previous proposal. RAFT therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. RAFT strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase "Unless modified by the lists shown below" to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., "all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher") and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for "facilities used in the local distribution of electric energy." As the starting point for the BES definition, RAFT supports the use of the phrase "all Transmission Elements" and the qualifying sentence: "This does not include facilities used in the local distribution of electric energy." This language helps ensure that FERC, NERC, and the Regional Entities ("REs") will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act ("FPA"). In Section 215(a)(1), Congress unequivocally excluded "facilities used in the local distribution of electric energy" from the keystone "bulk-power system" definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – "instability, uncontrolled separation, [and] cascading failures," 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). RAFT thanks the SDT for the excellent work to include this sentence. For similar reasons, RAFT believes the use of the phrase "Transmission Elements" as the starting point for the base definition is desirable because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term "Transmission" makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. RAFT recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, RAFT agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, RAFT is prepared to support the BES definition as proposed by the SDT. While RAFT supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, RAFT believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the

core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, RAFT will support the SDT's proposal.

Yes

We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

RAFT supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. RAFT believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation

Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good

starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."

Yes

RAFT supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

RAFT supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which we discuss in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

RAFT has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, RAFT believes the

appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Finally, RAFT believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. RAFT strongly believes that there should be technical justification for thresholds for this issue and all other issues.

Yes

RAFT continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term "transmission Elements" in the initial paragraph should be changed to "Elements." Radial systems are not transmission systems and including the word "transmission" in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to "generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). We urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," discussed in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC's Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The "Note" as drafted by the SDT indicates that "a normally open switching device between radial systems" will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, RAFT strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a "note" suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.

Yes

RAFT supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, RAFT urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term "Qualifying Aggregate Generation Resources" or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System

or LN.
Yes
RAFT strongly supports the exclusion of Local Networks ("LNs") from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. RAFT also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, RAFT supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to "improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system." RAFT supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. RAFT believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a "group of contiguous transmission Elements operated at or above 100kV" the starting point for identifying a LN would be improved by deleting the term "transmission" from this phrase. This is so because LNs are not used for transmission and the use of the term "transmission Elements" is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word "transmission" if the word is deleted and the Exclusion applies to any "group of Elements operated at 100kV or above" that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term "transmission Elements" is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. RAFT also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: "The LN does not transfer energy originating outside the LN for delivery through the LN." We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: "The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN." We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater

than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term "Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is meant by the use of the term "non-retail generation" in subparagraph (a). From context, we believe the SDT considers "non-retail generation" to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer's own load. We therefore suggest that the SDT replace the term "non-retail generation" with "generation located behind the retail customer's meter." Similarly, we are unsure what is meant by the phrase "the LN and its underlying Elements." We believe the phrase "and its underlying Elements" could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase "the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system." We believe this phrase more accurately reflects the SDT's intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. RAFT also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be

revised to read: “Except in unusual circumstances, power flows only into the LN.” Finally, we note that the LN exclusion must not operate in any way as a substitution for the statutory prohibition on including “facilities used in the local distribution of electric energy” in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a “facility used in the local distribution of electric energy,” then it is not part of the BES in the first instance, and so consideration of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.

Yes

RAFT supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.

No

RAFT extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. RAFT supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, RAFT is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that RAFT specifically supports the changes made by the SDT in the “Effective Date” provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. RAFT supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. RAFT also supports the 24-month transition period for the reasons laid out by the SDT.

Individual

Marc Farmer

West Oregon Electric Cooperative

Yes

The West Oregon Electric Cooperative (WOEC) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System (“BES”) that markedly improves both the existing definition and the SDT’s previous proposal. WOEC therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. WOEC strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase “Unless modified by the lists shown below” to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., “all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher”) and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for “facilities used in the local distribution of electric energy.” As the starting point for the BES definition, WOEC supports the use of the phrase “all Transmission Elements” and the qualifying sentence: “This does not include facilities used in the local distribution of electric energy.” This language helps ensure that FERC, NERC, and the Regional

Entities (“REs”) will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act (“FPA”). In Section 215(a)(1), Congress unequivocally excluded “facilities used in the local distribution of electric energy” from the keystone “bulk-power system” definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – “instability, uncontrolled separation, [and] cascading failures,” 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). WOEC thanks the SDT for the excellent work to include this sentence. For similar reasons, WOEC believes the use of the phrase “Transmission Elements” as the starting point for the base definition is desirable because both “Transmission” and “Elements” are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term “Transmission” makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria (“SCRC”) (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. WOEC recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, WOEC agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, WOEC is prepared to support the BES definition as proposed by the SDT. While WOEC supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, WOEC believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, WOEC will support the SDT’s proposal.
Yes
We support the SDT’s changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word “and” (“the primary and secondary terminals”). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT’s intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: “Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES.” This language will help ensure that there is no controversy over whether the SDT’s use of the word “and” in the phrase “the primary and secondary terminals” was intentional. We also support the SDT’s proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at

the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."
Yes
WOEC supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. WOEC believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying

Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."
Yes
WOEC supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

WOEC supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which we discuss in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

WOEC has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, WOEC believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Finally, WOEC believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. WOEC strongly believes that there should be technical justification for thresholds for this issue and all other issues.

Yes

WOEC continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term "transmission Elements" in the initial paragraph should be changed to "Elements." Radial

systems are not transmission systems and including the word “transmission” in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to “generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)”). We urge the SDT to replace this language with the defined term “Qualifying Aggregate Generation Resources,” discussed in more detail in our response to Question 3. This language will preserve the SDT’s ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC’s Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The “Note” as drafted by the SDT indicates that “a normally open switching device between radial systems” will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, WOEC strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a “note” suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.

Yes

WOEC supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, WOEC urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term “Qualifying Aggregate Generation Resources” or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.

Yes

WOEC strongly supports the exclusion of Local Networks (“LNs”) from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. WOEC also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, WOEC supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to “improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system.” WOEC supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load

while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. WOEC believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a "group of contiguous transmission Elements operated at or above 100kV" the starting point for identifying a LN would be improved by deleting the term "transmission" from this phrase. This is so because LNs are not used for transmission and the use of the term "transmission Elements" is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word "transmission" if the word is deleted and the Exclusion applies to any "group of Elements operated at 100kV or above" that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term "transmission Elements" is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. WOEC also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: "The LN does not transfer energy originating outside the LN for delivery through the LN." We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: "The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN." We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term "Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is meant by the use of the term "non-retail generation" in subparagraph (a). From context, we believe the SDT considers "non-retail generation" to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer's own load. We therefore suggest that the SDT replace the term "non-retail generation" with "generation located behind the retail customer's meter." Similarly, we are unsure what is meant by the phrase "the LN and its underlying Elements." We believe the phrase "and its underlying Elements" could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase "the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system." We believe this phrase more accurately reflects the SDT's intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. WOEC also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that

allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: "Except in unusual circumstances, power flows only into the LN." Finally, we note that the LN exclusion must not operate in any way as a substitution for the statutory prohibition on including "facilities used in the local distribution of electric energy" in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a "facility used in the local distribution of electric energy," then it is not part of the BES in the first instance, and so consideration of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.

Yes

WOEC supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.

No

WOEC extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. WOEC supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, WOEC is encouraged that the

20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that WOEC specifically supports the changes made by the SDT in the “Effective Date” provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. WOEC supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. WOEC also supports the 24-month transition period for the reasons laid out by the SDT.
Individual
John Seelke
PSEG Services Corp
Yes
Yes
Yes
Yes
Yes
Yes
Yes
1. If a 50 MVA generator that is included per I2 is connected to an excluded radial system, would the generator be excluded or included per E1b)? If yes, then the language “unless excluded under Exclusion E1 and E3” in I1 needs to be added to I2, I4, and I5. 2. Non-retail generation in E1c) was described behind-the-meter generation in the Webinar. The term “non-retail generation” should be defined because one could infer that generation defined by E2 is “retail generation.” Also, is the 75 MVA limit intended apply to the generator (as stated) or its net capacity as defined in E2? If it means the generator MVA, does that mean that generation excluded in E2 cannot exceed 75 MVA when connected to an excluded radial system? 3. In general, the definition needs to better define the impact that “exclusion” has on a different “inclusion” or “exclusion.”
Yes
Yes
Yes
No
Group
Bruce Wertz

Power Utility Compliance Consultants
Yes
However, one of the FERC directives in Order 743 charged NERC with delineating the difference between transmission and distribution. The Inclusions and Exclusions are a step in that direction, but this subject will need more consideration in Phase II.
Yes
No
Since an aggregate of 75 MVA is allowed at a single site, there is no basis for maintaining the 20 MVA for a single generator. The proposed MOD-026 assigns thresholds by region that are much higher than 20 MVA for modeling purposes. Since modeling generally would require more granularity than what is necessary for the reliable operation of the interconnected transmission system (BES), the SDT might want to review the threshold basis for NERC Project 2007-09 (Generator Verification).
Yes
Yes
To distinguish this Inclusion from Inclusion I2, the SDT might want to clarify that the collection system (usually at voltage below 100 KV anyway) is not part of the BES—just the resources and any transformers included by I1, if this is indeed the intent of this Inclusion.
Yes
Yes
This is a much needed change from the first posting, as this will maintain the status quo referred to in the introduction text.
Yes
Yes
This Exclusion and Exclusion E1 aid in the delineation of distribution versus transmission.
Yes
This is a needed exception to Inclusion I5 as these reactive power resources are used by retail customers for power factor correction at their own facilities in order avoid imposed power factor penalties.
Yes
It might be worthwhile to explain the relationship (timeline) between the BES Definition implementation plan and the compliance implementation plan proposed in the BES RoP team's new Appendix 5C for the NERC Rules of Procedure.
Individual
Sylvain Clermont
Hydro-Quebec TransEnergie
No
The proposed revision to the definition maintaining this bright line of 100 kV would expand significantly what is considered to be BES in HQT's case (the amount of added facilities could be ten times more). Since the main structure of Quebec system is included in the BES where the best norms and standards apply, the inclusion in the BES of sub-systems at lower voltage and including generation will not bring significant impact on the reliable operation of the interconnected system, because of the nature of the Quebec Interconnection. Furthermore for HQT's system, the proposed BES definition combined with the exception procedure are presently incompatible or at least inconsistent with the regulatory framework applicable in Quebec. The proposed changes have not address this concern, neither the SDT's responses to our previous comments last May (Q.1 and 12). We reiterate that the definition and the exception procedure shall be determined by Quebec's regulator, the Régie de l'Énergie du Québec, (Quebec Energy Board) which has the responsibility to ensure that electric power transmission in Quebec is carried out according to the reliability standards

it adopts. Per se, it would be necessary that E1 and E3 grant exclusions with much higher level of generation. It would also be necessary to allow for several levels of application for the Reliability Standards, in accordance with the Régie de l'énergie du Québec approach: the Bulk Power System (BPS) as determined using an impact-based methodology, the Main Transmission System (MTS), and other parts of Regional System. Standards related to the protection system (PRC-004-1 and PRC-005-1) and those related to the design of the transmission system (TPL 001-0 to TPL-004-0) shall be applicable to the first level, but all other reliability standards shall be applied to the second level, the MTS. The MTS definition is somewhat different than the Bulk Electric System definition, and it includes elements that impact the reliability of the grid, supply-demand balance and interchanges. We argue that it would be necessary for NERC to address the regulatory issues outside ot the present context of the SDT and ROP team.
Yes
We believe that automatic inclusion of such generation and the path to connect them to the BES would bring a great amount of facilities in the BES. Generation should be considered on a different level such as "BES Support Elements" and provisions should be made so that some specific reliability standards would apply to them.
Yes
Same comment than Q. 3. Also, since the path to connect the dispersed generation is often done at distribution voltage, that lower voltage path should not be included in BES.
No
No
Even with the modification proposed, it is too much restrictive to refuse exclusion of radial system when they have generator or multiple generating units of aggregate capacity greater than 75 MVA, especially when a system is able to function reliably with the loss of generation much higher than this amount. To count on the exception procedure to exclude radial system with greater generation is risky since no specific criteria have been given to guide such exclusion. In most cases for radial or local system including generation, the path that connects the generation should not be included in the BES. Generators should be allowed to be considered "BES support elements" and reliability standards should apply to them in specific.
Same comment than Q7.
Yes
Yes
In the Implementation plan, it is given only 24 months for compliance after applicable regulatory approval. Considering the possibility that a proposed transition plan may involve commissioning of long term projects, a provision for such situation should be made with longer delay.
Individual
Michael Falvo
Independent Electricity System Operator
Yes
Yes
Yes
While we agree with Inclusion I2, we suggest removing the parentheses enclosing the text "with gross individual…" since their inclusion may lead to an erroneous reading of provision to include generators that do not meet ERO Statement of Compliance Registry Criteria.
No

We thank the SDT for excluding the cranking paths from the BES definition, a point we had raised in our comments to the previous posting. However, we had also disagreed with the inclusion of Blackstart Resources and reiterate our view that their inclusion is superfluous given there is already a designation specific for system restoration covered by an existing standard, to recognize their reliability impacts and to ensure their expected performance. NERC Standards EOP-005-2 stipulates the requirements for testing blackstart resource and cranking paths. This testing requirement suffices to ensure that the facilities critical to system restoration are functional when needed, which meets the intent of identifying their criticality to reliability. We therefore suggest removing Inclusion I3 entirely.
Yes
The revised Inclusion I4 does indeed clarify that there is no requirement for a contiguous BES path from the dispersed generation resources to the point of interconnection to the BES.
Yes
The provisions of Inclusion I5 fully address the concerns we expressed in our previous comments.
No
We support the provisions of E1 in principle but require clarification of some issues and suggest alternative wording in some cases. It is unclear if the connection voltage of generation referred to in E1.b affects whether a radial system could be excluded under E1 although from the context it appears that it would. For clarity we suggest appending “connected at 100 kV or higher.” Please provide in the BES definition document an explanation of “non-retail” and “retail” generation used in E1.c. Additionally, despite the fact the revisions to Inclusion I3 (Blackstart Resources) removed any reference to Cranking Paths, Exclusion 1 (b) and (c) both indicate that the exclusion of a radial system would not be allowed if generation identified in I3 were connected to it. This implies that the Cranking Path for this Blackstart Resource would have to be BES. This appears to be an inconsistency. We suggest removing the phrase “not identified in Inclusion I3” in both instances. We disagree with notion that the capacity of generation connected to a radial system ought to determine whether that radial system should be classified as BES. Firstly, it is a given that the generation connected to the subject radial that meets the registry criteria would already be captured within the core BES definition and Inclusion I2. The function served by a radial that is of importance in the current context is that of delivering surplus power to the rest of the bulk power system and so, the impact on the BES of loss of the radial system or its connected generation needs to be considered. In our view, the “BES-status” of the radial itself is immaterial and so too is the aggregate capacity of generation resources connected to it. Detailed arguments regarding impact on the BES can be made in support of an application for an exclusion under the Exception Process, but it would be beneficial to avoid unnecessarily including a radial merely because it has more than 75 MVA of qualifying generation connected to it, without equal consideration of the connected load. To put a “bright line” on the consideration of impact referred to above, we suggest: In E1 (b): Replace "an aggregate capacity less than or equal to 75 MVA (gross nameplate rating)" with "a net capacity provided to the BES of less than or equal to 75 MVA." In E1 (c): Replace "an aggregate capacity of non-retail generation less than or equal to 75 MVA (gross nameplate rating)" with "a net capacity of non-retail generation provided to the BES of 75 MVA." This wording would be consistent with E2 (i). Finally the word “affect” stated in the note accompanying E1 lends itself to mis-interpretation. We therefore suggest the following revision to achieve greater clarity: “This exclusion applies to radial systems connected by a normally open switch.”
Yes
No
Consistent with our comments in response to Q7, we propose removing E3 (a) since, as explicitly described in E3 (b), one of the characteristic of the LN is that power flows only into the LN. The level of generation contained within the LN is therefore immaterial, particularly where the most onerous contingency or system operating condition occurring within the LN, results in acceptable BES performance as defined by the applicable criteria of the NERC transmission planning standards. The generation connected within the LN that meets the registry criteria would already be captured within the definition of the BES as provided for in Inclusion I2.
Yes
Yes

We wish to also express our support for phased approach proposed in the draft supplemental SAR. Development of the revised BES definition is an important and complex undertaking. The product of this work is fundamental to establishing the applicability of NERC Reliability Standards. The issues identified for attention in Phase 2 of this project warrant careful investigation and as such allowing additional time to properly research and stakeholder them is justified. The draft Implementation Plan for the BES definition sates “Compliance obligations for Elements included by the definition shall begin 24 months after the applicable effective date of the definition.” We are concerned that the stated implementation period may be insufficient time to (1) prepare and file exception requests and have these assessed; and (2) in cases where these exception requests are not approved, to develop and complete transition plans for newly identified BES Elements and Facilities, particularly where those plans require major investments for the procurement, installation and commissioning of additional equipment. We therefore propose the following alternative wording for the Implementation Plan: “Compliance obligations for elements included by the definition shall be evaluated and an implementation schedule established within 24 months.” Throughout the document various phrases are used to describe generating units/resource, viz. “generation resources”, “generating resources”, “generating unit” and “power producing resources”. Please review these to identify and address any possible inconsistencies.
Individual
John Allen
Rochester Gas & Electric and New York State Electric & Gas
No
The second sentence, “This does not include facilities used in the local distribution of electric energy,” is vague and not sufficiently clear for northeast industry expert colleagues to be certain of what is “not included.” This sentence seems to apply only to distribution facilities that have already been classified based on the FERC “Seven Factor Test” in Order 888. If so, this sentence be re-written as follows for clarity: “This does not include facilities classified as distribution facilities.” For US entities, this classification is clearly delineated in our annual FERC Form 1 filing.
No
We generally agree, but suggest modification to the language of Inclusion I1 to clarify its application for transformers with more than two windings: “Transformers with two or more terminals operated at 100 kV or higher, unless excluded under Exclusion E1 and E3.” Based on this wording, transformer tertiary windings would also be BES – is that the intent?
No
Inclusion I2 should remove the reference to the Statement of Compliance Registry Criteria. The definition should stand on its own. I2 should be revised to read: “Generators with a gross nameplate rating of 20 MVA or greater, or a generating plant/facility connected at a common bus, with a gross aggregate nameplate rating of 75 MVA or greater and is directly connected at a voltage of 100 kV or above. BES includes the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100 kV or above.” This is consistent with the proposed I2 and the current Compliance Registry Criteria.
No
Inclusion I3 should be changed to include the phrase, “material to,” currently in the Statement of Compliance Registry Criteria (Section 3C3). Based on the definition wording, the Generator Step-Up transformer (GSU) would not be BES if the generator would not otherwise already be included as BES under another definition provision.
No
The term “common point” needs clarification and/or definition. (e.g., is it intended to apply to the risk of single mode failure, where all the resources could be lost for a single event?) Some northeast industry expert colleagues interpret I2 to mean the collector system itself needs to be 100 kV or above in order to be BES. I2 seems to not include the collector system itself in BES. I4 be restated as follows: “Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a collector system connected at a common point. BES includes the interconnecting substation with the step-up transformer(s) connected at a voltage of 100 kV or above.” [alternatively, replace the bold italics with, “generator terminals through the high-side of”] Also note that some wind collector systems require supplemental dynamic reactive resources or

special control system to met reliability standards. As written, these reactive resources or controls may not be considered to be BES.

Yes

There is no such thing as “supplying or absorbing Reactive Power” but the intended meaning is sufficiently clear since it is industry ‘shorthand’. Suggest alternative wording: “Static or dynamic Reactive Power resources that are connected at 100 kV or higher, or…”

No

E1 needs to be revised to make it less confusing. “Radial systems” leaves the impression that E1 is not simply a “radial line exclusion”, because of the plural and the word “systems.” Northeast industry expert colleagues are not clear at all what this sentence specifies: “A group of contiguous transmission Elements that emanates from a single point of connection of 100 kV or higher.” • Does E1 apply only to a single radial transmission line (and its associated “group of Elements”)? • Alternatively, does E1 apply to multiple radial lines “emanating from” the same substation regardless of the bus configuration – would a ring bus or a two-bus system that is connected with a tie breaker be considered as “a single point of connection”? This definition is not clear. Clarity is imperative. E1(c) should define or replace the term “non-retail”. Industry needs clarity on exactly what generation this applies to, in order to properly apply this definition. The Note referring to the “Normally Open switch” needs further clarification. As written, it seems to conflict with FERC order 743, paragraph 55: “While commenters would like to expand the scope of the term “radial” to exclude certain transmission facilities such as tap lines and secondary feeds via a normally open line, we are not persuaded that such categorical exemption is warranted.” E1 should be restated as follows: “Radial systems: A single transmission line or transformer not otherwise identified in the Inclusions above, with a single point of connection of 100 kV or higher and: a) Only serves Load. Or, b) Only includes generation resources, not identified in the Inclusions above. Or, c) Both serves Load and only includes generation resources, not identified in the Inclusions above.

No

E2 should be consistent with the Statement of Compliance Registry Criteria. References to Balancing Authority, Generator Owner, and Generator Operator should not be included in the BES definition. “Net capacity” is unclear – must flow never exceed 75 MVA on an instantaneous or integrated hourly energy basis per either design or operating experience? There is a potential for hundreds of MW to be interconnected at a customer facility, with the “net capacity” (= flow into the transmission system? Instantaneous? Annual average? On an integrated hourly basis at any hour?) being less than 75 MVA – are hundreds of MW of generation “not material” to BES reliability? The conditions under which direction of flow (i.e., “net capacity”) is assessed are critical, but E2(i) is silent on this. In E2(ii), the “and”, “or”, and “or” are not clear – what are the necessary terms of the referenced “binding obligation” and what is an “applicable regulatory authority”? Are “standby” and “back-up” and “maintenance” power services independently defined and provided by a GOP, GO, or BA? Northeast industry expert colleagues do not understand the relevance of E2(ii) to BES reliability. E2 should be restated as follows: “A generating unit or multiple generating units that serve all or part of retail customer Load with electric energy on the customer’s side of the meter if the flow to or from the BES never exceeds 75 MVA”

No

“Local Network” is capitalized (network not capitalized at the beginning of E3) throughout E3, yet it is not defined in the NERC Glossary. This exclusion is vague. This exclusion applies to a network with “multiple points of connection” with the purpose “to improve the level of service to retail customer load” – this phrase is intent-based and not reliability-based – most/all transmission “improves service” compared to it not being there. In essence, this exclusion can be obtained if a portion of the network: 1. Doesn’t have significant generation (again, “non-retail” phrase is unclear) 2. Power only flows “into” this portion of the network, and not (ever? Even under any TPL design contingencies?) “out.” Is this considering only pre-contingency steady state conditions? During contingency conditions and for the period following a contingency the LN could supply power to other parts of the network depending on the nature of the contingency. The conditions under which direction of flow is assessed are critical, but E3(b) is silent on this. 3. This portion of the network is not part of a monitored transmission interface This “Local Network Exclusion” is supported by a technical analysis which relied on transfer distribution factors (see http://www.nerc.com/docs/standards/sar/bes_definition_technical_justification_local_network_20110

819.pdf on the NERC BES Definition standard page http://www.nerc.com/filez/standards/Project2010-17_BES.html). This transfer distribution factor (TDF) method was rejected by FERC in Order 743. Paragraph 85 of the Order states: “Given the questionable and inconsistent exclusions of facilities from the bulk electric system by the material impact assessment and the variable results of the Transmission Distribution Factor test proposed in NPCC’s compliance filing in Docket No. RC09-3, there are no grounds on which to reasonably assume that the results of the material impact assessment are accurate, consistent, and comprehensive.93 Additionally, we have noted how the results of multiple material impact tests can vary depending on how the test is implemented.” Unless E3 is made more specific and clear, it should be stricken.

No

Consider using other wording to replace “retail”.

Yes

If the definition and inclusions and exclusions are not sufficiently specific and clear, stakeholders will flood NERC and RROs with interpretation requests and/or apply the definition and its inclusions or exclusions incorrectly. Explanatory figures with one-line diagrams should be developed and shared to illustrate the system configurations included and excluded in this BES Definition. This would be very helpful for definition clarity. This should be done as part of an “Application Guide” for the BES Definition – this has precedence in CIP-002 version 5. Attached is a sample set of one-line diagrams with interpretations based upon the inclusions and exclusions developed by Northeast Power Coordinating Council members for discussion purposes as an example, but note that there is not a uniform agreement on these diagrams based on the BES Definition as written, due to lack of clarity.

Group

David Kiguel

Hydro One Newtoeks Inc.

No

Although we agree with the concept and commend the SDT for developing explicit inclusions and exclusions as part of the definition, we believe there are several outstanding issues and concerns listed as our response to Q11 that need to be addressed by the SDT and by NERC as the ERO.

Yes

No

We do not agree with the thresholds of 20 MVA for a single unit and 75 MVA aggregate at a plant, carried forward from the compliance registry. We understand the suggested phased approach and expect that the issue will be dealt with at that future time. With the exception of units that are must runs for reliability reasons, we suggest that the SDT should consider units smaller than 75 MVA or x MVA is designated as BES support element and not BES element. These units should only be required to comply with a handful of relevant NERC Standards. For example, • Voltage and frequency ride through capability • Voltage control (AVR, etc.) • Underfrequency trip setting • Protection relay setting coordination • Data submission for modeling; verification of capability and model These smaller and geographically dispersed generating resources should neither be designated as BES element nor be required to have its connection path be designated as BES. We suggest removing the parentheses enclosing the text “with gross individual…” since their inclusion may lead to an erroneous reading of provision to include generators that do not meet ERO Statement of Compliance Registry Criteria.

No

We agree with the SDT in excluding the cranking paths from the BES definition, a point we had raised in our comments to the previous posting. We also disagree with the inclusion of blackstart resources and reiterate our view that their inclusion is superfluous given there is already a designation specific for system restoration covered by an existing standard, to recognize their reliability impacts and to ensure their expected performance. NERC Standard EOP-005-2 stipulates the requirements for testing blackstart resources and cranking paths. This testing requirement suffices to ensure that the facilities critical to system restoration are functional when needed, which meets the intent of identifying their criticality to reliability. We therefore suggest completely removing Inclusion I3. We suggest the SDT to drop I3 on the basis that: • The availability and performance expectations of blackstart resources are ensured by existing related standards; and • Unless they meet the BES definition under inclusion

I2, there is no perceived reliability value in everyday operation of the BES.
No
Although we agree with the I4 concept, we suggest that the SDT should consider that this category primarily includes wind and solar farms and their collector system. We believe these facilities should not be included as BES elements but rather as supporting elements (see comments under I2) for the following reasons: a) Any additional benefit of classifying these resources as BES is insignificant for the reliability of supply (capacity and energy), considering the intermittent and widely variable nature of these resources. The planning and operational standards and practices make sure that their unavailability or unexpected (sudden) loss, which are significantly more likely due to the natural elements than those due to mechanical or electrical causes, will not jeopardize the reliability of the supply; and b) The reliability of the aspects of the collector system of these resources (their impact on reliability of the bulk transmission system) is not different from that of distribution systems (load serving feeders) which are excluded from the BES. We agree with the revised portion of Inclusion I4 which does indeed clarify that there is no requirement for a contiguous BES path from the dispersed generation resources to the point of interconnection to the BES.
Yes
No
Although we agree with the exclusion of radial systems, we believe that the reliability of the interconnected transmission network should not be determined by the amount of installed generation on the radial system. We believe that the generation limit is restrictive and has little or no technical basis. It is not the size of a unit on the radial system that should determine the reliability impact on the BES but more importantly its location, configuration and system characteristics such as reliability must run unit. We believe that there is no reason to divide E1 in three subsets of a, b and c. The end result is that a radial system is excluded if it does not have more than 75 MW of aggregate non-retail generation. However, consistent with E2 we suggest replacing "an aggregate capacity of non-retail generation less than or equal to 75 MVA (gross nameplate rating)" with "a maximum net capacity of non-retail generation provided to the BES of 75 MVA." We suggest deleting the references to I3 in E1 and E3 because we believe that this reference is in contradiction to I3 and probably an oversight and should be corrected. I3 does not require path to be BES but it implies here that a radial system cannot be excluded if there is a Blackstart unit on it.
Yes
No
We agree with the exclusion concept of LN. However, the reliability of the interconnected transmission network should not be determined by the amount of installed generation in the local network. We believe that the generation limit is restrictive and has little or no technical basis. It is not the size of a unit in the LN that will determine the reliability impact on the BES but more importantly its location, configuration and system characteristics such as reliability must run unit. We suggest that the SDT should address this in phase 2 to increase the installed generation limit in a LN. We suggest deleting the references to I3 in E1 and E3 because we believe that this reference is in contradiction to I3 and probably an oversight and should be corrected. I3 does not require a path to be BES but it implies here that a radial system cannot be excluded if there is a Blackstart unit on it.
Yes
Yes
• The definition of the Bulk Electric System (BES) is a foundational construct for the North American Electric Reliability Corporation (NERC). FERC Orders 743 and 743-A do not mandate a 100 kV approach. Instead, it states that a 100 kV bright line threshold is one approach to defining the BES. It further states that only “some” 115/138 kV facilities are necessary for the reliable operation of the bulk system. We believe that if one subset issue (such as 20 MVA vs. 75 MVA) of the entire definition, requires more time and resources to arrive at the correct answer, the much larger and more fundamental issue of how to define BES should not have been dismissed without the appropriate analysis before another definition is proposed to be adopted by the ERO. • The proposed definition, in combination with other new and/or modified Reliability Standards such as newly modified and

approved TPL Standards will require significant system upgrades with high dollar investments. We are deeply concerned that a) no such assessment has been undertaken by the SDT and/or the ERO and b) the proposed definition of the BES is not based on a technical analysis that will enhance the reliability of the interconnected transmission network. o The NERC as the ERO should at least undertake a cost and incremental reliability benefit analysis for its proposed definition of BES. Furthermore, cost impacts and reliability benefit assessments of the BES definition coupled with other new and modified reliability standards (such as the TPL Standards) must also be undertaken and weighed against the potential benefits, if any, of this or any proposal. Not providing such an assessment but using the 100 kV level as a starting point for the BES definition, gives no assurances of benefits for any stakeholder including respective governmental and regulatory authorities and rate payers in Canada or the USA. o The proposed definition would significantly increase the population of BES elements. Many of the standards requirements for these new elements will introduce administrative burden and operating expenses. This would impose significant costs, costs that ratepayers will have to bear, with little or no gain in reliability benefits for the interconnected transmission system. We suggest that the resulting BES definition must identify incremental reliability benefits by the ERO for the interconnected transmission network based on sound technical analysis to justify the change to those who will pay for any required system upgrades – the ratepayer. • The draft Implementation Plan for the BES definition states “Compliance obligations for Elements included by the definition shall begin 24 months after the applicable effective date of the definition.” We are concerned that the stated implementation period will give insufficient time to complete transition plans for newly identified BES Elements and Facilities, where those plans require approval, procurement, installation and commissioning of additional equipment. We believe a period of 60 months at a minimum is more appropriate. Finally, we believe that the SDT proposed approach for exception criteria is reasonable recognizing that one method/criteria can not be applicable to everyone and every situation within the ERO footprint. However, we believe that there is a huge gap and lack of any transparency on how the exception application will be evaluated and processed. We strongly suggest that the SDT develop a reference or a guidance document as part of the RoP that should provide guidance to Registered Entities, Regional Entities and the ERO on how an exception application should be processed. Else, (a) it will pose a challenge for each of the entities including ERO, and (b) may introduce Regional discretion and be perceived as having no transparency for the registered entities.
Individual
Steve Eldrige
Umatilla Electric Cooperative (UEC)
Yes
The Umatilla Electric Cooperative (UEC) believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System (“BES”) that markedly improves both the existing definition and the SDT’s previous proposal. UEC therefore supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. UEC strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase “Unless modified by the lists shown below” to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., “all Transmission Elements operated at 100kV or higher and Real Time and Reactive Power resources connected at 100kV or higher”) and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for “facilities used in the local distribution of electric energy.” As the starting point for the BES definition, UEC supports the use of the phrase “all Transmission Elements” and the qualifying sentence: “This does not include facilities used in the local distribution of electric energy.” This language helps ensure that FERC, NERC, and the Regional Entities (“REs”) will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act (“FPA”). In Section 215(a)(1), Congress unequivocally excluded “facilities used in the local distribution of electric energy” from the keystone “bulk-power system” definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in

enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – "instability, uncontrolled separation, [and] cascading failures," 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). UEC thanks the SDT for the excellent work to include this sentence. For similar reasons, UEC believes the use of the phrase "Transmission Elements" as the starting point for the base definition is desirable because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used in NERC Reliability Standards, and the term "Transmission" makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. UEC recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, UEC agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, UEC is prepared to support the BES definition as proposed by the SDT. While UEC supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, UEC believes a 200kV threshold would be more appropriate for WECC than a 100kV threshold. In addition, a 200kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view are therefore incorrect. That said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, UEC will support the SDT's proposal.

Yes

We support the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the

transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus, and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

UEC supports the changes made in Inclusion 2 and believes that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process that would examine the technical justification for these thresholds and that would establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little process. UEC believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes that generation be included in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES

Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria.. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe is it highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Finally, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100kV or above."

Yes

UEC supports the removal of the Cranking Path language in I3. As noted in our response to Question 9, there is no reason to classify as BES the facilities interconnecting a BES generator to the bulk interstate system. A Cranking Path is simply a specific type of such an interconnection facility.

Yes

UEC supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term

"Qualifying Aggregate Generation Resources," which we discuss in more detail in our response to Question 3. This language will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a Local Network. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

UEC has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are "power producing resources" and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses "power producing devices." Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Third, UEC believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process. Finally, UEC believes this issue should be addressed in Phase 2 since there is not technical justification or analysis done to determine the thresholds. UEC strongly believes that there should be technical justification for thresholds for this issue and all other issues.

Yes

UEC continues to strongly support the radial system exclusion, which is necessary as a legal matter, because, among other reasons, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term "transmission Elements" in the initial paragraph should be changed to "Elements." Radial systems are not transmission systems and including the word "transmission" in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to "generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). We urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," discussed in more detail in our response to Question 3. This language will

preserve the SDT's ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC's Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The "Note" as drafted by the SDT indicates that "a normally open switching device between radial systems" will not serve to disqualify the Radial from exclusion under Exclusion 1. As discussed above, UEC strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a "note" suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.

Yes

UEC supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, UEC urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term "Qualifying Aggregate Generation Resources" or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.

Yes

UEC strongly supports the exclusion of Local Networks ("LNs") from the BES. The conversion of radial systems to local networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers would ultimately benefit. UEC also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, UEC supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to "improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system." UEC supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. UEC believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a "group of contiguous transmission

Elements operated at or above 100kV" the starting point for identifying a LN would be improved by deleting the term "transmission" from this phrase. This is so because LNs are not used for transmission and the use of the term "transmission Elements" is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word "transmission" if the word is deleted and the Exclusion applies to any "group of Elements operated at 100kV or above" that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term "transmission Elements" is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. UEC also believes that subparagraphs (a) and (b) are redundant, because whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: "The LN does not transfer energy originating outside the LN for delivery through the LN." We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept proposed by the SDT, we believe the language would be clearer if it read: "The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN." We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term "Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is meant by the use of the term "non-retail generation" in subparagraph (a). From context, we believe the SDT considers "non-retail generation" to be the equivalent of generation that is located behind the retail meter, usually but not always owned by the customer and used to serve the customer's own load. We therefore suggest that the SDT replace the term "non-retail generation" with "generation located behind the retail customer's meter." Similarly, we are unsure what is meant by the phrase "the LN and its underlying Elements." We believe the phrase "and its underlying Elements" could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase "the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system." We believe this phrase more accurately reflects the SDT's intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. UEC also believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph

(a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours, a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: "Except in unusual circumstances, power flows only into the LN." Finally, we note that the LN exclusion must not operate in any way as a substitution for the statutory prohibition on including "facilities used in the local distribution of electric energy" in the BES. Therefore, even with the LN exclusion, the SDT must retain this statutory language in the core definition of the BES, as discussed in our answer to Question One. If a certain piece of equipment is a "facility used in the local distribution of electric energy," then it is not part of the BES in the first instance, and so consideration of the LN Exclusion, or of any other Exclusion, any Inclusion, or any Exception, would be both unnecessary and uncalled for.

Yes

UEC supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.

No

UEC extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. UEC supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, UEC is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not

be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that UEC specifically supports the changes made by the SDT in the “Effective Date” provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. UEC supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. UEC also supports the 24-month transition period for the reasons laid out by the SDT.
Individual
Steve Alexanderson
Central Lincoln
Yes
We agree with the changes. We must point out that the overall flow, or how one proceeds through the inclusions and exclusions is not clear. Can an item that meets an inclusion be subsequently excluded? If so, this needs to be explicitly stated. So far, we only have the flow chart produced by the ROP team that indicates otherwise (http://www.nerc.com/docs/standards/sar/20110428_BES_Flowcharts.pdf). This was made evident by the question at the 9/28 webinar regarding an I5 capacitor on an E3 local network. The questioner thought the capacitor was BES per I5, but the answer was that it was excluded per E3. We can find no support for the answer given. The listing of specific exclusions within I1 (exception proves the rule) argues for questioner’s stance that the capacitor is BES as written. Also, if included items could subsequently be excluded, they would be no different from any other item that met the voltage threshold of 100kV. There would be no need for any of the inclusions if all possible outputs from the inclusion tests go to the same exclusion test inputs. We strongly support the addition of the language regarding local distribution facilities, as it matches congressional intent to leave the regulation of these facilities to state and local authorities.
Yes
Central Lincoln strongly agrees with this inclusion as written. It is consistent with the recent PRC-004 and PRC-005 interpretation and the NERC definition of Transmission. We believe the recent changes to this inclusion add clarity.
No
Referencing the Criteria which in turn references the BES definition creates a circular definition. Central Lincoln encourages the adoption of specific thresholds that are technically justified. We also note that the Criteria and its revisions do not go through the standards development process, so that thresholds may change with little warning and without triggering an implementation plan for facilities that may be swept into the BES as a result.
Yes
We agree with the removal of the voltage language, since the inclusions and exclusions apply only to equipment over 100 kV.
Yes
Central Lincoln agrees both with the inclusion and with the revised language. The revised language removes the need to provide a separate definition for “Collector System”.
No
While we agree that reactive devices of sizable capacity connected at 100 kV or higher are needed for BES reliability, Central Lincoln fails to see why this inclusion is needed as they are already captured by the 100 kV threshold. We would propose instead to eliminate this inclusion and substitute an exclusion for smaller capacity devices. If the SDT really believes an inclusion for reactive devices is needed, we suggest the SDT provide a technically justified capacity limit within the inclusion. In addition we suggest also including the phrase “…unless excluded under Exclusion E1, E2 or E4” similar to that in I1. Please see the answer to Q1 above Q10 below.
No
Central Lincoln notes that a new term has been introduced, “non-retail generation,” with no definition

provided. The answer to the question on this during the 9/28 webinar indicated that non-retail generation was behind the retail customer's meter. We can see no reason why the net-metered PV systems should count toward the aggregate limit (exceeding the limit means no exclusion) while a non-blackstart thermal plant doesn't (the radial system is excluded if any amount of load is present). We have also heard the SDT meant just the opposite of what was stated in the webinar. We ask that a reasonable definition for non-retail be provided within the BES definition document. We strongly agree that radial systems should be excluded and that the presence of normally open switching devices between radial systems should not cause them to be considered non-radial. Such a result would cause the removal of these devices to the detriment of the local level of service. We note that the singular "A normally open switching device" is used and suggest that an allowance be made for the possibility of multiple devices. "Normally open switching devices…"
Yes
No
We strongly agree that local networks should be excluded, since they act much like the radial systems excluded in E1 while providing a higher level of service to customers. These networks should not be discouraged in the name of reliability. We again object to the introduction of the new confusing term "non-retail generation" with no definition provided.
No
Please see Central Lincoln's answers to Q1 and Q6. Any device that might be excluded under E4 has already been included per I5. Unless I5 is removed, or rewritten as suggested above; this exclusion will exclude nothing.
Yes
We note that the SAR for Phase II, like that for Phase I, does not include all entity types. We see no reason to maintain dual definitions for the different entity types, and the resulting confusion. In order to help meet the fast approaching January target date, Central Lincoln will be voting affirmative in this ballot, with the hope these comments will be addressed in Phase II. If the ballot should fail, please address these comments in this phase. Thanks to the team for their good work.
Individual
Allan Long
Memphis Light, Gas and Water Division
Yes
Yes
We believe further clarification is needed to limit BES transformers only to those serving the transmission system and not distribution loads, such as excluding transformers with one or both terminals operating below 100 kV.
Yes
We are in general agreement with this inclusion, except that there is no threshold for reactive resources as there is for generators and transformers. We recommend that a minimum level be established for this equipment, such as 100 MVAr, or that studies be conducted to determine an appropriate threshold.
Yes
Yes
Yes

No
We appreciate the work the drafting team has done in preparing this document.
Individual
Shane Sweet
Harney Electric Cooperative, Inc.
Yes
HEC agrees with the changes by the SDT. Although HEC believes that there needs to be explicit language stating whether or not an item that meets inclusion can be overridden by an exclusion. An example of this was given during the Webinar on 9/28 regarding a Capacitor included under I5 yet excluded under E3 according to the NERC representative.
Yes
HEC agrees with the inclusions to I1 and believes that add clarity to the definition.
No
HEC would like to see the inclusion of specific thresholds that are technically justified.
Yes
HEC agrees with the inclusions to the core definition.
Yes
HEC agrees with the inclusions and revised language to the definition
No
HEC believes this inclusion should include a technically justified capacity limit on reactive resources to warrant inclusion.
Yes
HEC strongly agrees that radial systems should be excluded from the BES and that the presence of a normally open switching device between radial systems should not cause them to be considered non-radial
Yes
Yes
HEC believes that local networks should be excluded from the BES and agrees with exclusions to the definition.
Yes
HEC agrees with E4.
No
Group
Joe Tarantino
Braun Blasing McLaughlin, PC
Yes
In an effort to avoid potential confusion and provide clarity we believe the following sentence “This does not include facilities used in the local distribution of electric energy” more appropriately fits under the “exclusions,” rather than “inclusions,” section.
Yes
We believe additional clarification of transformers that are to be included may be achieved with respect to auto transformers, phase angle regulators and generator step-up transformers by adding the following recommended sentence: “All transformers (including autotransformers, voltage regulators, and phase angle regulators) with primary and secondary terminals operated at or above 100kV, unless excluded by E1 or E3.”
No
We recommend removing the reference of the ERO Statement of Compliance Registry Criteria (Registry Criteria). The BES Definition should be the governing document and independent of ERO registration requirements. The definition should drive what appears in the Registry Criteria.

Additionally, we support using the BES Phase 2 technical analysis to identify and provide technical support for determining the appropriate minimum MVA rating that a single unit, or the aggregation of multiple units, must meet to be considered part of the BES.
Yes
We recommend rewording Inclusion I3 as follows: “Only Primary Blackstart resources designated as part of the Transmission Operator’s restoration plan.” We have concerns that making all Blackstart generation either primary or secondary BES elements will create an incentive to remove those secondary Blackstart capable units in order to avoid BES inclusion. Making the primary Blackstart unit the only BES element will remove this incentive. In so doing, this will allow the secondary Blackstart units to remain in the Transmission Operator’s plan and training program as an alternate tool for the Transmission Operator to restore the system.
Yes
Yes
However, appropriate MVAr level should be established. Reactive resources should be treated similar to generation criteria and included in the technical studies associated with the Phase 2 technical analysis in order to establish the appropriate MVAr level included as BES.
Yes
For the E1 reference “Note,” we would benefit from additional clarification identifying the treatment of a normally open switch and offer the following: “Radial systems shall be assessed with all normally open switching devices in their open positions.” The wording in Exclusion 1-c should more clearly reflect what is intended by using the term “non-retail generation.” Also, as with the technical justification for Inclusions I2 and I4, it is recommended that the generation threshold, i.e. gross nameplate values, be deferred to Phase 2.
Yes
It is preferred to hold reference to gross nameplate rating/threshold values until generation technical justification is completed as part of Phase 2; these studies should apply to any real or reactive power threshold reference. For Exclusion E3-b using the phrase “[p]ower flows only into the LN” is too restrictive. An allowable MW threshold of LN power producing resources should be deferred to the Phase 2 BES technical analysis. Where no generation is present in the LN, it is recommended that an allowance for residual flow through the LN.
Yes
Individual
Russell Noble
Cowlitz County PUD
Yes
Cowlitz County PUD No. 1 (Cowlitz) commends the SDT for the simplified concise core definition. However, Cowlitz believes that only Real and Reactive Power resources necessary for the support of the BES should be included. Therefore, Cowlitz suggests the core definition or the Inclusions section state this. This will allow basis for demonstrating resource Elements should be excluded from the BES through the Rules of Procedure exception process. This is not to say that owners of non-BES resource Elements should not be registered, as such entities may still have an obligation to contribute BES Reliability functions. Cowlitz votes affirmative and believes the above concern can be addressed in Phase II.
Yes
Cowlitz supports the SDT’s efforts to simplify this inclusion. However, Cowlitz suggests the following change to clarify the inclusive nature of the use of “and:” Transformers with primary and secondary terminals both operated at 100 kV or higher…
Yes
Cowlitz also strongly supports Phase II to address the lack of technical justification of the MVA bright

line criteria.
Yes
Yes
However, Cowlitz suggests Inclusion 4 be made parallel with Inclusion 2: …(greater than the gross aggregate name plate rating per the ERO Statement of Compliance Registry Criteria) utilizing…
No
Cowlitz has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are “power producing resources” and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses “power producing devices.” Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Finally, Cowlitz believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process.
Yes
Yes
Cowlitz is concerned that Exclusion 2 will place local distribution utilities in a difficult position; under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation. With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similar, a Local Network could lose its status because behind-the-meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN. However, Cowlitz understands the difficulty of pressing the argument at this time for any generation that is connected directly through a dedicated step-up transformer to Elements at or greater than 100 kV.
Yes
Cowlitz strongly supports the categorical exclusion of Local Networks (“LNs”) from the BES. This exclusion will allow conversion of radial systems to LNs without compliance impact, and should be encouraged rather than discouraged as networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. The decision of whether to network radial systems should be made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers will ultimately benefit from the path chosen by the SDT. Cowlitz believes that the word “transmission” does not add clarity to the Exclusion; simply stating “Elements” is sufficient. This will allow for a gradual acceptance that transmission is not defined by a certain voltage, but more a medium in which electrical power is efficiently transported from power resources to load centers where it is distributed. The old convention of transmission versus distribution no longer fits in the current regulatory environment, and as such should be retired. Cowlitz also believes that subparagraphs (a) and (b) are redundant; subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. However, Cowlitz also believes that removing (a) will complicate FERC’s acceptance of this exclusion. Therefore this should be addressed in Phase II. Cowlitz is confused by the use of the term “non-retail generation” in subparagraph (a). From context, we believe the SDT considers “non-retail generation” to mean generation that is not connected through a dedicated step-up transformer to voltages at or above 100 kV, is consumed by the retail customer’s load, or consumed within the LN rather than being physically exported and sold to markets outside the LN. Cowlitz suggests that the SDT rewrite subparagraph (a) to read “Limits on connected generation: The LN and its underlying Elements do not include generation resources identified in Inclusion I3 and does not have any generation net power flow greater than 75 MVA across any single retail revenue metering point into an Element operated at

or greater than 100 kV.”
Yes
No
Cowlitz appreciates the opportunity to comment, and the hard work of the SDT.
Individual
Brian Evans-Mongeon
Utility Services, Inc.
Yes
Upon reflection of the core definition and BES Inclusion Designations, Utility Services believes that there is an unintended redundancy between the two. Utility Services would like to suggest that the portion of the core definition that refers to the Real and Reactive Power resources be removed from the core and to leave the Inclusions as is.
Yes
Utility Services supports the comments offered by other commenters who suggest that transformers and other related devices be mentioned in the inclusion.
Yes
Yes
Utility Services supports suggestions by others that request that the language of the Inclusion use the exact language of the SCRC III.3.c. Leaving the language as is will likely increase the number of black start facilities beyond those currently applicable.
Yes
Yes
Yes
Utility Services is very concerned that the "single point of connection" lacks clarity and applications need to be identified. Utility Services suggests that the SDT publish illustrative one-line diagrams to aid the industry in determining when the designations are best applied.
Yes
Utility Services suppports the comments offered by others suggesting that the language be revised to be identical to the language in the SCRC.
Yes
Yes
Yes
Utility Services would like to raise the question of whether SCRC III.3.d (the so-called "Generator Materiality" clause)is incorporated within the BES Inclusion Designations. One theory suggests that given that I2 is designed to deal with III.3.a and III.3.b and I3 reflects the need to incorporate black start generation; then generators under the materiality clause are not identified with the inclusion criteria. However, the second theory suggests that resources identifed through I2 reflect the entire III.c.1-4 language of the SCRC, then the generators in the material clause are captured under I2. But if this is the case, then I3 is redundant to I2 and does not need to separately addressed.
Group
Jean Nitz
ACES Power Marketing
Yes
Yes

Yes
We'd prefer to see the language from the ERO Statement of Compliance Registry Criteria repeated within the BES Definition itself instead of referencing an outside document. As it stands right now, the Compliance Registry Criteria needs to stay intact for Phase I of this project. That makes the Compliance Registry Criteria reliant on the BES Definition and vice versa. We understand that the Statement of Compliance Registry Criteria may be reviewed/revised at the same time Phase 2 of this project is being developed, therefore we agree with Inclusion I2 of this draft.
No
Blackstart Resources can actually be on the distribution system. There is still the question of whether the distribution system would then be subjected to the enforceable standards. If so, there would most likely be a significant cost increase associated with tracking compliance for these distribution systems without a commensurate increase in reliability since Blackstart Resources are rarely used. This could very well cause entities to un-designate Blackstart Resources on distribution systems to avoid these distribution systems from becoming part of the BES. The same rationale that was used for eliminating cranking paths could also be applied to Blackstart Resources.
Yes
Further clarification on what "dispersed power" means would be helpful. How does it compare to distributed generation?
Yes
We understand the SDT's logic behind not setting any threshold values for reactive resources during Phase 1 of this project. Ample time and effort should be given to developing the technical justification behind such values. However, we encourage the SDT to consider adding threshold values in Phase 2 of the project to provide even more clarity to this inclusion.
Yes
The term "non-retail generation" used in Exclusion E1 (item c) and again in E3 (item a) should be clarified (see comments for question 8 below). The Note after item c should also be clarified to indicate that closing a normally open switch doesn't affect this exclusion.
Yes
"A generating unit or multiple generating units that serve all or part of retail customer Load with electric energy on the customer's side of the retail meter" sounds a lot like "non-retail generation" that is used in E1 and E3 which was described in the webinar as generation that resides on the customer side of the retail meter and is used to supply energy to that customer's load and is owned by the customer. Is E2 assuming that this generation is not owned by the customer? Also, part ii) adds to the confusion. Conceptually we agree with this exclusion but further clarification is preferred.
No
The term "non-retail generation" used in Exclusion E1 (item c) and again in E3 (item a) should be clarified. The following applies to E3 (item c): A flowgate should not be used to limit applicability of E3. First, there is no definition for what constitutes a permanent flowgate. Second, flowgates are often created for a myriad of reasons that have nothing to do with them being necessary to operate the BES. While section c) in E3 attempts to limit the applicability to permanent flowgates, there is no definition for what constitutes a permanent flowgate particularly since no flowgate is truly permanent. The NERC Glossary of Terms definition of flowgate includes flowgates in the IDC. This is a problem because flowgates are included in the IDC for many reasons not just because reliability issues are identified. Flowgates could be included to simply study the impact of schedules on a particular interface as an example. It does not mean the interface is critical. As an example, it could be used to generate evidence that there are no transactional impacts to support exclusion from the BES. Furthermore, the list of flowgates in the IDC is dynamic. The master list of IDC flowgates is updated monthly and IDC users can add temporary flowgates at anytime. While the "permanent" adjective applied to flowgates probably limits the applicability from the "temporary" flowgates, it is not clear which of the monthly flowgates would be included from the IDC since they might be added one month and removed another. Flowgates are created for many reasons that have nothing to do with them being necessary to operate the BES. First, flowgates are created to manage congestion. The IDC is more of a congestion management tool than a reliability tool. FERC recognized this in Order 693, when they directed NERC to make clear in IRO-006 that the IDC should not be relied upon to relieve

IROLs that have been violated. Rather, other actions such as re-dispatch must be used in conjunction. Second, flowgates are used as a convenient point to calculate flows to sell transmission service. The characteristics of the flowgate make it a good proxy for estimating how much contractual use has been sold not necessarily how much flow will actually occur. While some flowgates definitely are created for reliability issues such as IROLs, many simply are not.
Yes
No
Individual
Martyn Turner
LCRA Transmission Services Corporation
Yes
No
LCRA TSC supports the inclusion of transformers (with both the primary and secondary windings operated at 100-kV or higher) in the BES definition; however, additional clarification is suggested. The term transformers needs to be further defined with respect to function (auto transformers, phase angle regulators, generator step-up transformers, etc.). Similarly, a separate definition for “Transformer” could be developed and included in the NERC Glossary of Terms.
No
Yes
No
LCRA TSC suggests consistency between this inclusion criteria and the criteria used in I2 for “generation”.
No
This inclusion conflicts with exclusion E4. Which one takes priority?
No
The current wording is unclear with respect to the treatment of normally open switching devices. LCRA TSC suggests the following language to replace the existing language on the note to E1: “Two radial systems connected by a normally open, manually operated switching device, as depicted on prints or one-line diagrams for example, may be considered as radial systems under this exclusion.” The current wording is unclear with respect to “non-retail generation”. The sudden loss of large, radial-supplied load may result in reliability deficiencies. LCRA TSC suggests stating a load level or a load capacity in the exclusion.
No
Yes
No
This exclusion conflicts with inclusion item I5. Which one takes priority?
Yes
LCRA TSC supports the direction the standards drafting team taking with this project on the BES Definition and encourages further clarification as noted in these comments for proper application.
Individual
Saurabh Saksena
National Grid
No
While we agree that the BES should not include facilities used in the local distribution of energy, we

feel that this is already captured in Exclusion E3. Stating it in the core definition is confusing, and should be eliminated. We suggest removing “This does not include facilities used in the distribution of electric energy” from the core definition.
Yes
Yes
Yes
Yes
We agree with Inclusion I4, however we feel that the inclusion could be interpreted in some different ways. This inclusion could be interpreted to exclude dispersed generation greater than 75 MVA if the first common point is less than 100 kV. To eliminate any confusion in the interpretation of this inclusion, we suggest this wording: Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) connected to a Transmission Element at 100 kV or above, utilizing a system designed primarily for aggregating capacity which includes all transformers between the generator(s) and the Transmission Element.
No
We see some potential conflicts between this inclusion and the exclusions. Without some additional wording, it seems like some devices that are in a Local Distribution Network would be considered BES. In addition, reference to a transformer in Inclusion I1 is not necessary since the definition includes “all Transmission Elements operated at 100 kV”, thus by definition and I5, those connected to 100 kV and higher are already included. We suggest: Static or dynamic devices dedicated to supplying or absorbing Reactive Power that are connected at 100kV or higher unless the device is in an area excluded from BES by Exclusion E1 or E3, or through a dedicated transformer with a high-side voltage of 100kV or higher, unless excluded by Exclusion E4.
Yes
Yes
We agree with this exclusion, but the intention of point (i), the net capacity provided to the BES does not exceed 75 MVA, is not clear. We suggest this wording: “the net capacity provided to the BES for 90% of the hours of the year does not exceed 75 MVA”.
Yes
We agree with Exclusion E3 on local networks, however we suggest this clarification to the first sentence: A group of contiguous transmission Elements operated at or above 100kV but less than 300kV that distribute power to Load rather than transfer bulk power across the interconnected system under normal (“all-lines-in”) configuration and conditions. We also suggest the following clarification to part c, so that the IROLs don’t get overlooked: Not part of Flowgate, transfer path, or an Interconnected Reliability Operating Limit (IROL). The LN does not contain a monitored Facility of a permanent Flowgate in the Easter Interconnection, a major transfer path within the Western Interconnection, or a comparable monitored Facility in the ERCOT or Quebec Interconnection, and is not a monitored Facility included in an IROL.
Yes
Yes
The proposed implementation period in the draft definition is too short. The new BES definition will likely result in increased operational costs during the implementation period that will ultimately be borne by customers. Implicit in the Commission's directive to change the BES definition is the Commission's determination that the benefits of this change, including consistency among the regions, outweigh the ratepayer impacts. However, National Grid remains concerned that the ratepayer impacts have not been fully taken into account. The implementation period is a tool that can allow NERC to meet the Commission's directive while softening any resulting ratepayer impacts. Implementation can and should be staged in order to mitigate and even out rate increases. National Grid suggests that the implementation period be flexible to allow entities who anticipate that large

and/or expensive upgrades to the BES will be necessary to meet compliance can submit an alternate implementation plan to spread compliance and the associated rate changes over a longer period; we would suggest a minimum of 7 years. This time period was also recognized as a reasonable implementation time period in the recent TPL-001-2 for those portions of the standard that would also result in plans that would require siting, permitting and construction activities. This BES definition is likely to have similar impacts for some entities and allowing for an implementation timeline with the definition change enables achievement of the goals while recognizing the realities of constructing facilities in today's environment.
Group
Louis Slade
EMP & NERC Compliance
Yes
Dominion agrees with the clarifying changes provided that the use of the capitalized terms “Transmission” and “Elements” mean that an Element that is radial is not part of the BES regardless of whether it is specifically included in the Exclusions (E1 through E4).
Yes
The proposed changes are much clearer than proposed language in the 1st draft of this BES definition.
Yes
Dominion interprets the revised language to exclude generating resources connected at less than 100 kV. If this interpretation is not accurate, then Dominion does not support the revised language.
Yes
Yes
No
The language in the last part of Inclusion I5 “….or through a transformer that is designated in Inclusion I1” introduces ambiguity. Specifically, it is not clear how implememtation of this language would result in the inclusion of any Static or dynamic device that is not already included. Dominion suggests that the language in I5 be revised to read “Static or dynamic devices dedicated to supplying or absorbing Reactive Power that are connected at 100 kV or higher, or connected through a dedicated transformer with at least one terminal voltage of 100 kV or higher.” Dominion understands that the SDT intended for this Inclusion to not address generators or power producing resources because they are covered elsewhere (I2 and I4) and requests that the SDT confirm this understanding.
No
Dominion does not agree that exclusion of a radial should be based upon the aggregate capacity of generation. A radial serving only generation should be excluded just as it is for load (as proposed by the SDT in 1a). No reliability gaps exist since the owner and/or operator of generation (with an individual with gross individual or gross aggregate nameplate rating per the ERO Statement of Compliance Registry Criteria) must comply with applicable reliability standards. Dominion requests that the SDT provide technical justification for E1a and E1b as it did for E3, and explain the intent of the footnote in E1.
No
Dominion supports exclusion for behind-the-meter generation, (if connected at >100 kV) if the load behind the meter (to which that generation is intended to support) does not rely on generation outside that metered point for purposes of back-up energy or any type of ancillary services at any time. The proposed language appears to suggest that standby, back-up, and maintenance power services are always required. There are alternative means to provide these services, such as reducing load to match ‘reliability services’ provided by the available behind-the-meter generation. Further, even if standby, back-up, and maintenance power services are always required, the exclusion criteria obligation should be placed on the retail load, not the generation outside the metered point
No
Dominion could support if E3a were eliminated.

Yes

Yes

As a general policy, Dominion believes that attempting to precisely refine the definition of the BES may not be the best way to insure BES reliability. Instead, industry effort should be focused on developing specific reliability standard requirements targeted toward solving problems that need to be addressed. Stated differently, every Element that could have an impact on the BES does not need to be included in the definition of the BES. NERC's Functional Model addresses the broad range of functions performed by the electric utility industry. When reliability concerns are identified and can best be addressed via a standard, modifying the requirements in that standard as applicable to that functional model should occur rather than attempting to modify the BES definition. Effort spent on developing specific reliability standard requirements mentioned above is superior to the industry engaging in definitional debates that do not address to the underlying reliability drivers. It is not essential that each reliability standard explicitly apply to each registered entity. The existing reliability requirements, as applied to the various functional entities require communication of information necessary to insure there are no reliability gaps, either directly or indirectly among the various entities. The existing standards typically have a hierarchy wherein: • Planners (PA, TP) receive information predominately from the owners (GO, DP, TO) and those that represent end-use customers (LSE and PSE); • Reliability entities (BA, RC and TOP) receive information predominately from operating entities (GOP, TOP) and those that represent end-use customers (LSE and PSE); • Planners provide reliability assessments to Reliability entities (BA, RC and TOP) and receive feedback on these reliability assessments (including validity of assumptions and result); and • Reliability entities (BA, RC and TOP) give instructions (including when necessary directives) to operating entities (GOP, TOP) and those that represent end-use customers (LSE and PSE). This is how the industry has historically operated, how it operates today and why the standards in place today are structured as they are. Reliability is best served when the standards themselves contain the appropriate requirements and are applied to either an Element or Facility or to the appropriate functional entity (DP, GO, GOP, LSE, TO, TOP, etc.). Definitional boundaries can create the potential for false positives in reliability and, in fact, may be detrimental to reliability in the longer term if they impose additional compliance burdens without closing a reliability gap.

Individual

Jennifer Flandermeyer

Kansas City Power & Light Company

No

There is no established basis for the generation thresholds referenced through the ERO Statement of Compliance Registry Criteria in Appendix 5B and the specificity of 75 MVA in the proposed BES definition. The objectives identified in the Phase 2 SAR for the definition of the Bulk Electric System include establishing an engineering basis for the generation thresholds. Phase 2 will be critical in refining and improving the Bulk Electric System definition and bringing additional clarity to the definition.

Yes

No

Nameplate rating of the generator is not a reflection of what can be actually injected into the transmission system with resulting electrical impacts on transmission loading and behavior. Recommend the BES definition be based on a generators established net accredited generating capacity instead of what it could do by nameplate rating. In addition, many generators do not achieve their nameplate rating due to limitations imposed by the limitations and capabilities of their turbine/boiler capabilities. Using the nameplate rating will not allow the exclusion of some generators that should be excluded. Recommend the following language: Generating resource(s) with a net accredited capability per the ERO Statement of Compliance Registry Criteria and including the generator terminals through the high-side of the step-up transformer(s), connected at a voltage of 100 kV or above.

Yes

No
It is not clear that it is the injection at the collection point that is the defining point for the injection. Nameplate rating of the generator is not a reflection of what can be actually injected into the transmission system with resulting electrical impacts on transmission loading and behavior. Recommend the BES definition be based on a generating resource(s) established net accredited generating capacity at the common point instead of what it could do by nameplate rating that may not be achievable. Recommend the following language: Dispersed power producing resources utilizing a system designed primarily for aggregating capacity connected through a common point at a voltage of 100 kV or above with aggregate net accredited capacity at the common point of greater than 75 MVA.
Yes
No
Nameplate rating of the generator is not a reflection of what can be actually injected into the transmission system with resulting electrical impacts on transmission loading and behavior. Recommend the BES definition be based on a generating resource(s) established net accredited generating capacity instead of what it could do by nameplate rating that may not be achievable. Recommend the following change to the b) and c) parts of E1: b) Only includes generation resources not identified in Inclusion I3 with an aggregate net accredited capacity less than or equal to 75 MVA. Or, c) Where the radial system serves Load and includes generation resources not identified in Inclusion I3 with an aggregate net accredited capacity of non-retail generation less than or equal to 75 MVA.
No
Any facilities that are customer owned regardless of size or configuration are not under the jurisdiction or responsibility of the Registered Entity and should not be considered as included with a Registered Entity.
No
Although the Technical Justification Local Network guidance document is helpful in explaining the principles and concepts involved with determination of what constitutes a Local Network, criteria needs to be established regarding the impacts of LODF and PTDF that will clearly define what constitutes a Local Network to avoid debate and controversy.
Yes
No
Individual
Darryl Curtis
Oncor Electric Delivery Company LLC
Yes
Yes
Yes
Yes
Yes
Yes
Yes

Yes
Yes
Yes
No
Group
Mark Conner
Bill Middaugh
Yes
We believe that the new definition is a good clarification.
Yes
No
1. The parenthetical phrase regarding the ERO SCRC is not clear. Is the intent that the inclusion applies to any generating resource that is required to register as a Generator or Generator Operator per the ERO SCRC? Or was a reference to the 75 MVA threshold inadvertently omitted? It also seems that it wouldn't need to be in parentheses, just make it a phrase in the sentence. 2. The wording of the sentence after the parenthetical phrase is also worded awkwardly. Suggest changing it to "including the generator terminals and all electrical equipment up to and including the high side of generator step up transformers, if they are connected at a voltage of 100 kV or higher.
Yes
Yes
No
There should be a limitation on what reactive components needs to be included. The limits could be based on capacity of the units or on the voltage step that occurs upon switching of the device.
Yes
Yes
No
1. b) should be reworded to "Normally there is power flow only into the LN: The LN is not normally used to transfer power originating outside of the LN for delivery through the LN." There could be conditions inside the LN, such as large loads shut down for maintenance, which would allow the parallel transmission Elements to allow power to flow through the LN. Those conditions would have no negative or adverse effect on the BES. 2. Capitalize "Network" at the beginning of the Exclusion.
Yes
No
Group
David Thorne
Pepco Holdings Inc
Yes
Yes

No
The definition should not reference the ERO Statement of Compliance Registry Criteria; rather the actual generation threshold criteria should be listed in the definition itself. This way the definition can stand on it's own without having to refer to another document for applicability. Also, the wording should be changed to read "including the generator terminals through the high side of any dedicated generator step-up transformer(s), connected at a voltage of 100kV or above." Otherwise, the present wording could ensnare distribution facilities (similar to the cranking path argument in I3) if a 21 MVA generator was connected on a distribution line with no dedicated generator step-up transformer. In that case the distribution line and substation feeder transformer might be construed to be in scope.
Yes
Agree with the SDT decision to delete the inclusion of Black Start Cranking Paths.
No
The SDT reworded Inclusion I4 to use the phrase "utilizing a system designed primarily for aggregating capacity". This was to address a concern that the previous definition could ensnare distributed generation or small generators in a distribution system. We agree with the intent of this modification. I4 was intended solely to address wind and solar farms that use a collector system to aggregate their capacity. Therefore, to provide better clarity on the intent of this Inclusion, perhaps it would be better to specifically mention these examples in the wording: "Dispersed power producing resources (such as wind and solar farms, etc.) which utilize a system designed primarily for aggregating capacity, where the capacity is greater than 75MVA (gross aggregate nameplate rating) and the facility is connected at a common point at a voltage of 100kV or above."
No
Agree in principle. However, the last phrase "or through a transformer that is designated in Inclusion I1" is unnecessary, since if the resource were connected through a transformer meeting Inclusion I1 it would by nature be connected at 100kV or higher.
No
1) Additional clarification is needed on whether certain bus sections supplying radial systems would be considered part of the BES. It is critical that the BES definition address this issue, since it will define what transmission Protection Systems fall in scope for PRC-004 & 005. One way to address this issue would be to add a qualifier to Exclusion E1 that states, "if a radial system is supplied from a bus section in a substation, then this bus section is considered part of the radial system and is not considered part of the BES if the tripping of this bus section does not result in an interruption to any BES facilities when the station is operating in its normal configuration." 2) Since the SDT deleted the inclusion of Black Start Cranking Paths in I3 then reference to I3 in criteria E1b and E1c should also be removed. Limits on connected generation should only be constrained by the 75MVA limit. In summary, delete the phrase "not identified in Inclusion I3" from both Exclusions E1b and E1c.
Yes
No
1) In the Drafting Teams Consideration of Comments on the previous version, it was stated, "….It is not the SDT's intent to specifically exclude any facilities in major metropolitan areas; it expects that the specific examples mentioned (NYC, Washington DC) would not qualify for exclusion under the revised Exclusion E3." The currently proposed E3 will result in specific exclusion of major local networks in major metropolitan areas. These major LNs qualify for exclusion under proposed E3, and its qualifiers, in that they distribute power to the local load rather than act as facilities to transfer bulk power across the interconnected system. However, the LNs that supply large amounts of load in very dense load areas should have some transmission reliability considerations. To capture the appropriate LNs in question, consideration should be given to limiting the amount of load supplied by a LN to some load level. For example if an LN has a peak load level of less than 1,000MVA it would qualify for LN exclusion and if it exceeds 1,000MVA it would not qualify for exclusion. There are certainly many LNs that supply relatively small amounts of load, just as radial facilities. They should be excluded. It is important to develop a load level that would provide the proper balance between the small LNs and the major LNs. 2) Since the SDT deleted the inclusion of Black Start Cranking Paths in I3 then reference to I3 in criteria E3a should also be removed. Limits on connected generation should only be

constrained by the 75MVA limit. Therefore E3a should then read “Limits on connected generation: The LN and its underlying Elements do not include generation resources with an aggregate capacity of non-retail generation greater than 75 MVA (gross nameplate rating);”

Yes

Yes

1) From the proposed BES definition and Exclusion E1 it is very clear that a 138-12kV distribution transformer serving radial load would not be considered part of the BES. However, suppose this transformer was connected to a position in a ring-bus or a breaker-and-a-half arrangement. Would the physical bus between the transformer high side terminals and the two breakers in the ring-bus, or breaker-and-a-half-bus, be considered part of the BES? They would be contiguous transmission elements (bus) operating at 138kV and supplying a radial distribution transformer. Also, tripping of this “radial” bus section would not interrupt any BES facilities, due to the station bus arrangement. As such, by definition and Exclusion E1 this 138kV bus section (element) would not be part of the BES, and no special exclusion filing would be required. Is this correct? However, take the same 138-12kV transformer but this time connected in a typical line-bus arrangement. The transformer by definition is not a BES element. As was the case above, the bus section between the transformer and the two breakers in the line-bus would be contiguous elements (bus) operating at 138kV and supplying a radial distribution transformer. Again, by definition and Exclusion E1 this bus section (element) would not be part of the BES. However, in this case tripping of the “radial” bus section would result in an interruption to the through path of the station, and could therefore interrupt the through flow on BES facilities. Does this make either the transformer, or its associated bus section, or both part of the BES? Based on the above examples, if the type of bus connection could influence whether an element is included in the BES or not, then additional language needs to be added to the definition (either as an Inclusion or Exclusion) to make this point clear. The BES definition needs to be specific enough to eliminate any confusion as to what is included, and what is not included, and thereby greatly minimize, if not eliminate, the need to request interpretations. A sample FAQ document, with examples, would be extremely helpful, but should not be a substitute for a BES description which leaves little room for interpretation. 2) As seen from the above attempt to describe issues that need clarification, without a diagram to show specific situations, it is difficult to fully explain the concerns on ensuring that the BES definition stands on its own. Since the commenting process does not accommodate diagrams, PHI is sending separately a white paper with diagrams in an attempt to clarify the definition and make it as unambiguous as possible, leaving little room for interpretation. This paper may be helpful in developing a FAQ document. 3) The definition should state that it applies to a system “normal” configuration. It does not include maintenance or N-1 or any abnormal configurations. 4) There was no place on the comment forms to comment on the proposed Implementation Plan for the BES definition. So comments are included here. The proposed plan states “compliance obligations for Elements included by the definition shall begin 24 months after the applicable effective date of the definition." This is fine for most applications; however, there is an effect with PRC-005 compliance. PRC-005 (Protection System Maintenance Standard) requires that evidence for the last two maintenance intervals, in order to demonstrate that you are following the prescribed intervals in your maintenance plan. If additional facilities are brought into scope by the new BES definition, and the protection systems associated with these facilities were not previously maintained on the same interval as other BES facilities, then it may not be possible within the allotted 24 months to demonstrate the facilities were maintained within the prescribed intervals for BES facilities. An implementation plan at least as long as one full maintenance cycle would be required to assure compliance. This issue needs to be addressed or coordinated with PRC-005.

Group

Cynthia S. Bogorad

Transmission Access Policy Study Group (please see www.tapsgroup.org for a list of TAPS' more than 40 members)

Yes

TAPS appreciates the SDT’s work on this project. For the most part, TAPS supports what it believes to be the intent of the proposed language. The proposed specific exclusion of facilities used in the local distribution of electric energy is appropriate and consistent with Section 215 of the Federal Power Act. However, we have one suggestion to better carry out what we believe to be the SDT’s intent. The SDT

proposes to change the core generation definition from the prior version's "…Real Power resources as described below, and Reactive Power resources connected at 100 kV or higher unless such designation is modified by the list shown below," to "Unless modified by the lists shown below, … Real Power and Reactive Power resources connected at 100 kV or higher…." Because of this change from "as described below… unless… modified by the list shown below" to simply "unless modified by the lists shown below," the proposed core definition now has the effect of including all generation, regardless of size, that is connected at over 100kV. We do not think this is the SDT's intent. For the same reason, the core definition now has the effect of including all Reactive Power resources connected at over 100kV, including generators; Inclusion I5, which includes "[s]tatic or dynamic devices dedicated to supplying or absorbing Reactive Power," does not alter the core definition's inclusion of all Reactive Power resources connected at over 100kV (whether "dedicated" or not). The most straightforward solution to this problem is to simply delete Real and Reactive Power resources from the core definition, so that such resources are instead handled entirely in the Inclusions. The core definition would thus read: "Unless modified by the lists shown below, all Transmission Elements operated at 100 kV or higher. This does not include facilities used in the local distribution of electric energy."
Yes
TAPS supports the intent of proposed Inclusion I2. For the sake of clarity, we suggest revising "per the ERO Statement of Compliance Registry Criteria" to "as described in the ERO Statement of Compliance Registry Criteria."
Yes
We recommend clarifying that the dispersed power resources covered by this inclusion do not include generators on the retail side of the retail meter. Specifically, we recommend that the Inclusion read: "Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a system designed primarily for aggregating capacity, connected at a common point at a voltage of 100kV or above, but not including generation on the retail side of the retail meter."
Yes
Yes
TAPS supports the exclusion of radial systems from the BES Definition. Such systems are generally not "necessary for operating an interconnected electric transmission network," the standard in Orders 743 and 743-A. We have several suggestions to clarify the proposed language for this Exclusion. Proposed Exclusion E1 refers to "[a] group of contiguous transmission Elements that emanates from a single point of connection of 100 kV or higher." We appreciate the SDT's clarification of the point of connection requirement, but the term "a single point of connection" should be further defined (more clearly than just by voltage), and should be generic enough to encompass the various bus configurations. It is not the case, for example, that each individual breaker position in a ring bus is a separate point of connection for this purpose; in that situation, a bus at one voltage level at one substation should be considered "a single point of connection." Some examples of configurations that should be considered a single point of connection for this purpose are at https://www.frcc.com/Standards/StandardDocs/BES/BESAppendixA_V4_clean.pdf, Examples 1-6. Although the core definition (appropriately) refers to "Transmission Elements" (with a capital "T"), proposed Exclusion E1 refers to "transmission Elements" (with a lowercase "t"). To avoid confusion, either "Transmission" should be capitalized in both locations, or the word "transmission" should simply be deleted from Exclusion E1, leaving a "group of contiguous Elements." We understand that the lack of capitalization may have been a deliberate choice by the SDT in an attempt to avoid confusion that SDT members believe exists in the Glossary definition. If the Glossary definition of Transmission is unclear—which TAPS does not necessarily believe is the case—the answer is not to simply abandon the Glossary definition in favor of an entirely undefined term; it is to submit a SAR to improve the Glossary definition. Exclusion E1(c) refers to "an aggregate capacity of non-retail generation less than or equal to 75 MVA." "Non-retail generation" is potentially ambiguous, because it could be read as distinguishing between generation that will be sold at wholesale and generation that is used by the retail provider to meet retail load. On the understanding that the intent is in fact to

describe generation behind the end-user meter, sometimes referred to as “behind-the-second-meter generation,” we suggest the following revision: “an aggregate generation capacity less than or equal to 75 MVA, not including generation on the retail customer’s side of the retail meter.” Exclusion E1 concludes with a “Note”: “A normally open switching device between radial systems, as depicted on prints or one-line diagrams for example, does not affect this exclusion.” The Note should not specify the types of evidence required to prove a normally open switch, and the phrase “as depicted on prints or one-line diagrams” should be deleted. This phrase is equivalent to a “Measure” in a standard and should not be embedded in the equivalent of a “Requirement.” Since the phrase only gives an “example,” it does not in fact add anything to the Note, but may lead to confusion over what sort of evidence is required. If the phrase remains in the Note, it should at minimum be better explained: “A normally open switching device between radial systems, as depicted on prints or one-line diagrams used in the normal course of business for example, does not affect this exclusion.” In addition, while we believe the SDT’s intent is that two otherwise radial lines connected to each other by a normally open breaker are both excluded, the statement that a normally open switching device “does not affect this exclusion” is unclear. We suggest that the note be modified to state that a normally open switching device “does not prevent this exclusion from applying,” or words to that effect.

Yes

Yes

TAPS supports the exclusion of Local Networks from the BES. Such systems are generally not “necessary for operating an interconnected electric transmission network,” the standard in Orders 743 and 743-A. We have several suggestions to clarify the proposed language for this Exclusion. TAPS’ comments in response to Question 7 above regarding “points of connection at 100kV or higher” and “non-retail generation” are applicable to Exclusion E3 as well. The term “bulk power,” which occurs twice in Exclusion E3, is vague and could be read incorrectly as a reference to the statutorily-defined “bulk-power system,” which is not, we think, the SDT’s intent. The word “bulk” should be deleted, so that the Exclusion simply refers to transferring “power” across the interconnected system. TAPS raised this concern in response to the last posting of the BES Definition. In response, the SDT removed some instances of “bulk power” but left the remaining two, stating that “the SDT believes it provides conceptual value to the exclusion principle.” The SDT does not state what conceptual value the term is intended to provide; on the assumption that it relates to a distinction between transferring power from local generation to serve local load, and transferring power over longer distances, TAPS suggests, as an alternative to simply deleting the word “bulk,” that the Exclusion be revised to refer to “transfers of power from non-LN generation to non-LN load.” Exclusion E3(c) states: “Power flows only into the LN: The LN does not transfer energy originating outside the LN for delivery through the LN.” This statement is unclear because the two parts mean different things. TAPS proposes rewriting this sentence to state: “Power flows only into the LN, that is, at each individual connection at 100 kV or higher, the pre-contingency flow of power is from outside the LN into the LN for all hours of the previous 2 years” to help clarify the intent. Two years is suggested because it is the time period set out in the draft exception application form for which an applicant should state whether power flows through an Element to the BES.

Yes

Individual

Joe Tarantino

Sacramento Municipal Utility District

Yes

In an effort to avoid potential confusion and provide clarity we believe the following sentence “This does not include facilities used in the local distribution of electric energy” more appropriately fits under the “exclusions,” rather than “inclusions,” section.

Yes

We believe additional clarification of transformers that are to be included may be achieved with respect to auto transformers, phase angle regulators and generator step-up transformers by adding the following recommended sentence: “All transformers (including autotransformers, voltage

regulators, and phase angle regulators) with primary and secondary terminals operated at or above 100kV, unless excluded by E1 or E3.”
No
We recommend removing the reference of the ERO Statement of Compliance Registry Criteria (Registry Criteria). The BES Definition should be the governing document and independent of ERO registration requirements. The definition should drive what appears in the Registry Criteria. Additionally, we support using the BES Phase 2 technical analysis to identify and provide technical support for determining the appropriate minimum MVA rating that a single unit, or the aggregation of multiple units, must meet to be considered part of the BES.
Yes
We recommend rewording Inclusion I3 as follows: “Only Primary Blackstart resources designated as part of the Transmission Operator’s restoration plan.” We have concerns that making all Blackstart generation either primary or secondary BES elements will create an incentive to remove those secondary Blackstart capable units in order to avoid BES inclusion. Making the primary Blackstart unit the only BES element will remove this incentive. In so doing, this will allow the secondary Blackstart units to remain in the Transmission Operator’s plan and training program as an alternate tool for the Transmission Operator to restore the system.
Yes
We support using the BES Phase 2 technical analysis to identify and provide technical support for determining the appropriate minimum MVA rating that the aggregation of multiple units must meet to be considered part of the BES. We also support using the Phase 2 studies to identify an appropriate minimum MVA level that a single unit of the aggregation of multiple units must be considered BES.
Yes
However, appropriate MVAr level should be established. Reactive resources should be treated similar to generation criteria and included in the technical studies associated with the Phase 2 technical analysis in order to establish the appropriate MVAr level included as BES.
Yes
For the E1 reference “Note,” we would benefit from additional clarification identifying the treatment of a normally open switch and offer the following: “Radial systems shall be assessed with all normally open switching devices in their open positions.” The wording in Exclusion 1-c should more clearly reflect what is intended by using the term “non-retail generation.” Also, as with the technical justification for Inclusions I2 and I4, it is recommended that the generation threshold, i.e. gross nameplate values, be deferred to Phase 2.
Yes
It is preferred to hold reference to gross nameplate rating/threshold values until generation technical justification is completed as part of Phase 2; these studies should apply to any real or reactive power threshold reference. For Exclusion E3-b using the phrase “[p]ower flows only into the LN” is too restrictive. An allowable MW threshold of LN power producing resources should be deferred to the Phase 2 BES technical analysis. Where no generation is present in the LN, it is recommended that an allowance for residual flow through the LN.
Yes
Group
John P. Hughes
Electricity Consumers Resource Council (ELCON)
Yes
However, one of the FERC directives in Order 743 charged NERC with delineating the difference between transmission and distribution. The Inclusions and Exclusions are a step in that direction, but this subject will need more consideration in Phase II.
Yes

No
Since an aggregate of 75 MVA is allowed at a single site, there is no basis for maintaining the 20 MVA for a single generator. The proposed MOD-026 assigns thresholds by region that are much higher than 20 MVA for modeling purposes. Since modeling generally would require more granularity than what is necessary for the reliable operation of the interconnected transmission system (BES), the SDT might want to review the threshold basis for NERC Project 2007-09 (Generator Verification). It is understood that the threshold will be reconsidered in Phase II of the BES Definition Project; however, a modest change from 20 to 75 MVA seems appropriate on an interim basis justified by the current 75 MVA aggregate per site. The following phrase should be added at the end “unless excluded under Exclusion E2.”
Yes
Yes
The term “dispersed power” and “dispersed generation” are often synonymous with distributed generation, which includes behind-the-meter generation (CHP). The Inclusion should be clarified by specifically referencing wind and solar, or adopt the FERC term “Variable Energy Resources.” Also, to distinguish this Inclusion from Inclusion I2, the SDT might want to clarify that the collection system (usually at voltage below 100 KV anyway) is not part of the BES—just the resources and any transformers included by I1, if this is indeed the intent of this Inclusion. The following phrase should be added at the end “unless excluded under Exclusion E2.”
Yes
Yes
ELCON supports the changes made from the first posting for both E1 and E3 (which complements E1), as this will help maintain the status quo referred to in the introductory text. We seek one clarification: Some large industrial customers that operate in remote, rural locations provide distribution services to third parties (usually on a pro bono basis) where the local utility (LSE) is unable or unwilling to serve. These transactions, which are akin to “border-line sales” in utility parlance, are typically de minimis relative to the Load of the entity that delivers the power. While the distribution is at low voltages (less than 100 kV), the power may have been received by the entity at a higher voltage. We seek affirmation by the SDT that such situations are not precluded by Exclusion E1.
Yes
ELCON supports the proposed revisions to Exclusion E2.
Yes
This Exclusion and Exclusion E1 aid in the delineation of local distribution versus transmission. We suggest three clarifying revisions. First, the phase “but less than 300 kV” should be deleted. Many large industrial facilities have on-site distribution systems that operate above 300 kV due solely to the capacity of the lines to supply power over the distance required at the manufacturing sites. Second, for the same reasons discussed above (in response to question #7), the phrase “do not have an aggregate capacity of non-retail generation greater than 75 MVA (gross nameplate rating)” in “a)” should be changed to “the net capacity provided to the transmission grid does not exceed 75 MVA.” Third, the introductory phrase in “b)” -- “Power flows only into the LN” -- is inconsistent with the recognition in “a)” that power may flow out of an LN and into the transmission grid if there is generation connected to the LN and the 75 MVA limit is observed. We recommend either deleting the introductory clause or correcting it to read “Power is not transferred through the LN.”
Yes
This is a needed exception to Inclusion I5 as these reactive power resources are used by retail customers for power factor correction at their own facilities in order avoid imposed power factor penalties.
No
Individual
Don Schmit
Nebraska Public Power District

Yes
The drafting team has done a great job of adding clarity and to improving the BES definition. Although more work is needed as noted in comments below, overall the drafting team is on the right track with the BES defintion.
Yes
No
Inclusion 2 does not take into consideration a later exclusion (Exclusion 3). At the end of Inclusion 2 after the words "..100 kV or above." Add the words ", unless excluded under Exclusion 3".
Yes
Yes
However the exclusion needs to be noted in I2, so as to non conflict with I2. (See comment on #2 above.)
No
In E3 (a): please define "non-retail generation" as usued in E3(a). Also, what is the criterion that makes this genertion BES generation? The MVA rating only, or is there other criteria? A generator may have a 75 MVA gross nameplate rating, but may be limited physically or electrically to below the 75 MVA. Is this a basis for exclusion for this generator?
Yes
Regarding the Local Network: Can there be some additional technical documents or examples provided for the most common configurations? The LN document is a good document to provide guidance, however the supply of common configuration examples would be very helpful in determining LN applicability. Examples where technical document with examples would be helpful: 1. If a breaker and a half source substation provides two parallel 115 kV lines feeding a load only substation from separate breaker and a half legs at the source substation, would the two parallel lines feeding the load be a LN distribution network feed since theyare from the same source substation? 2. if there is a radial feed from a ring bus or a breaker and a half configuration to a radial load on a single line can the portion of the ring bus or breaker and a half bus between the line breakers and the breakers themselves at the source substation be excluded from the BES? 3. Can some legs of a 115kV breaker and a half substation be disgnated BES and the other legs be non BES depending on how the BES lines and loads tie in to the breaker and half legs? 4. In determining if elements are BES is there any consideration to fault locations and if these faults would interrupt BES flow on ring bus or breaker and a half configurations to help determine what is BES? If so, how many contingencies would be considered to interrupt BES flow?
Individual
David M. Conroy
Central Maine Power Company
No
The second sentence, "This does not include facilities used in the local distribution of electric energy," is vague and not sufficiently clear for northeast industry expert colleagues to be certain of what is "not included." This sentence seems to apply only to distribution facilities that have already been classified based on the FERC "Seven Factor Test" in Order 888. If so, this sentence should be restated as follows for clarity: "This does not include facilities classified as distribution facilities." For US entities, this classification is clearly delineated in our annual FERC Form 1 filing.
Yes
We generally agree, but suggest modification to the language of Inclusion I1 to clarify its application for transformers with more than two windings: "Transformers with two or more terminals operated at 100 kV or higher, unless excluded under Exclusion E1 or E3." Based on this wording, transformer

tertiary windings would also be BES – is that the intent?
No
Inclusion I2 should remove the reference to the Statement of Compliance Registry Criteria. The definition should stand on its own. I2 should be revised to read: “Generators with a gross nameplate rating of 20 MVA or greater, or a generating plant/facility connected at a common bus, with a gross aggregate nameplate rating of 75 MVA or greater; and is directly connected at a voltage of 100 kV or above. BES includes the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100 kV or above.” This is consistent with the proposed I2 and the current Compliance Registry Criteria.
No
Inclusion I3 should be changed to include the phrase, “material to,” currently in the Statement of Compliance Registry Criteria (Section 3C3). Based on the definition wording, the Generator Step-Up transformer (GSU) would not be BES if the generator would not otherwise already be included as BES under another definition provision.
No
The term “common point” needs clarification and/or definition. (e.g., is it intended to apply to the risk of single mode failure, where all the resources could be lost for a single event?) Some northeast industry expert colleagues interpret I2 to mean the collector system itself needs to be 100 kV or above in order to be BES. I2 seems to not include the collector system itself in BES. I4 should be restated as follows: “Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a collector system connected at a common point. BES includes the interconnecting substation with the step-up transformer(s) connected at a voltage of 100 kV or above.” [alternatively, replace "interconnecting substation with" with, “generator terminals through the high-side of” if the entire collector system is intended to be BES] Also note that some wind collector systems require supplemental dynamic reactive resources or special control system to met reliability standards. As written, these reactive resources or controls may not be considered to be BES.
Yes
There is no such thing as “supplying or absorbing Reactive Power” but the intended meaning is sufficiently clear since it is industry ‘shorthand’. We suggest an alternative wording of: “Static or dynamic Reactive Power resources that are connected at 100 kV or higher, or…”
No
E1 needs to be revised to make it less confusing. “Radial systems” leaves the impression that E1 is not simply a “radial line exclusion”, because of the plural and the word “systems.” Northeast industry expert colleagues are not clear what this sentence specifies: “A group of contiguous transmission Elements that emanates from a single point of connection of 100 kV or higher.” • Does E1 apply only to a single radial transmission line (and its associated “group of Elements”)? • Alternatively, does E1 apply to multiple radial lines “emanating from” the same substation regardless of the bus configuration – would a ring bus or a two-bus system that is connected with a tie breaker be considered as “a single point of connection”? • If the radial line is simply tapped off a BES line without any automatic interruption device, should not the radial line be included as part of the BES since a permanent fault on this radial line will take out the BES line it is tapping off of? If the radial line is defined as part of the BES, it could be subject to certain requirements such as vegetation management for overhead lines. • Should not the exclusion include some description of the operational requirements to help resolve the ambiguity? As it is, the exclusion is scenarios-based. When a specific scenario is overlooked, the oversight becomes a source of ambiguity. This definition is not clear. Clarity is imperative. E1(c) should define or replace the term “non-retail”. Industry needs clarity on exactly what generation this clause applies to, in order to properly apply this definition. The Note referring to the “Normally Open switch” needs further clarification. As written, it seems to conflict with FERC order 743, paragraph 55: “While commenters would like to expand the scope of the term “radial” to exclude certain transmission facilities such as tap lines and secondary feeds via a normally open line, we are not persuaded that such categorical exemption is warranted.” E1 should be restated as follows: “Radial systems: A single transmission line or transformer not otherwise identified in the Inclusions above, with a single point of connection of 100 kV or higher and: a) Only serves Load. Or, b) Only includes generation resources, not identified in the Inclusions above. Or, c) Both serves Load and only includes generation resources not identified in the Inclusions above."

No
E2 should be consistent with the Statement of Compliance Registry Criteria. References to Balancing Authority, Generator Owner, and Generator Operator should not be included in the BES definition. “Net capacity” is unclear – must flow never exceed 75 MVA on an instantaneous or integrated hourly energy basis per either design or operating experience? There is a potential for hundreds of MW to be interconnected at a customer facility, with the “net capacity” (= flow into the transmission system? Instantaneous? Annual average? On an integrated hourly basis at any hour?) being less than 75 MVA – are hundreds of MW of generation “not material” to BES reliability? The conditions under which direction of flow (i.e., “net capacity”) is assessed are critical, but E2(i) is silent on this. In E2(ii), the “and”, “or”, and “or” are not clear – what are the necessary terms of the referenced “binding obligation” and what is an “applicable regulatory authority”? Are “standby” and “back-up” and “maintenance” power services independently defined and provided by a GOP, GO, or BA? Northeast industry expert colleagues do not understand the relevance of E2(ii) to BES reliability. E2 should be restated as follows: “A generating unit or multiple generating units that serve all or part of retail customer Load with electric energy on the customer’s side of the meter if the flow to or from the BES can never exceeds 75 MVA."
No
“Local Network” is capitalized (network not capitalized at the beginning of E3) throughout E3, yet it is not defined in the NERC Glossary. This exclusion is vague. This exclusion applies to a network with “multiple points of connection” with the purpose “to improve the level of service to retail customer load” – this phrase is intent-based and not reliability-based – most/all transmission “improves service” compared to it not being there. In essence, this exclusion can be obtained if a portion of the network: 1. Doesn’t have significant generation (again, “non-retail” phrase is unclear) 2. Power only flows “into” this portion of the network, and not (ever? Even under any TPL design contingencies?) “out.” Is this considering only pre-contingency steady state conditions? During contingency conditions and for the period following a contingency the LN could supply power to other parts of the network depending on the nature of the contingency. The conditions under which direction of flow is assessed are critical, but E3(b) is silent on this. 3. This portion of the network is not part of a monitored transmission interface This “Local Network Exclusion” is supported by a technical analysis which relied on transmission distribution factors (see http://www.nerc.com/docs/standards/sar/bes_definition_technical_justification_local_network_20110819.pdf on the NERC BES Definition standard page http://www.nerc.com/filez/standards/Project2010-17_BES.html). This transfer distribution factor (TDF) method was rejected by FERC in Order 743. Paragraph 85 of the Order states: “Given the questionable and inconsistent exclusions of facilities from the bulk electric system by the material impact assessment and the variable results of the Transmission Distribution Factor test proposed in NPCC’s compliance filing in Docket No. RC09-3, there are no grounds on which to reasonably assume that the results of the material impact assessment are accurate, consistent, and comprehensive.93 Additionally, we have noted how the results of multiple material impact tests can vary depending on how the test is implemented.” The phrase “contiguous transmission elements” is also not clear, especially when qualified as not being part of a monitored transmission interface. Should the “contiguous transmission elements” comprise a complete and exhaustive set of contiguous elements? Or can they be a subset of a larger contiguous set in which the other elements of the larger set are actually part of a monitored interface? Unless E3 is made more specific and clear, it should be stricken.
No
Consider using other wording to replace “retail”
Yes
If the definition and inclusions and exclusions are not sufficiently specific and clear, stakeholders will flood NERC and RROs with interpretation requests and/or apply the definition and its inclusions or exclusions incorrectly. Explanatory figures with one-line diagrams should be developed and shared to illustrate the system configurations included and excluded in a BES Definition. This would be very helpful for definition clarity. This should be done as part of an “Application Guide” for the BES Definition – there is precedence for an “Application Guide” with graphical support in CIP-002 version 5. A sample set of one-line diagrams with interpretations based upon the inclusions and exclusions developed by Northeast Power Coordinating Council members for discussion purposes is available as an example, but note that there is not a uniform agreement on these diagrams based on the BES Definition as written, due to lack of clarity.

Individual
Kirit Shah
Ameren
Yes
a)The general concept is sound, but the Inclusion and Exclusion sections create so many circular references it is virtually impossible to take a definitive stance on whether an asset is included or excluded to the BES definition. Please revise the inclusion and exclusion criteria to give pinpointed statements that are final and do not reference other criteria, that then again reference other criteria.b)We believe that 200kV and above is the appropriate bright line for the Bulk Electric System. c)In I5, only those Reactive Power devices applied for the purpose of BES support or BES voltage control should be included. A Reactive Power device connected at >100kV but used for the purpose of voltage support to local load should not be included. d)The core definition uses "Transmission Elements" while E1 uses "transmission Elements". What is the difference? If one or both terms are applicable, their definition should be included.
Yes
Agree in general, but have the following comments:a)We agree in general with the revisions to the specific inclusions for transformers in I1; however, we believe the transformer voltage level should be 200kV or above. b)The inclusion is unclear since it includes a certain voltage transformers, but excludes those that have E1 or E3 Exclusion criteria. Each exclusion criteria has multiple stipulations to its applicability, and then has a final inclusive reference to I3. Please make the wording exact and not dependent on clausal statements.
No
a)This definition becomes dependent on a document that can be changed without direct correlation to the BES definition. Remove the reference to the ERO Statement of Compliance Registry Criteria, and simply state the criteria as currently used. There is no need to look up another definition in another document to identify what is included in the BES definition. b)All MOD Standards' requirements for generators should also follow this definition.
Yes
a)The definition should include only those black start generators connected 100 kV and above and included in the restoration plan. b)We agree with the changes but believe clarity would be added by changing the word “identified” to “designated”.
Yes
a)For a consistent application, we suggest that the definition of the terms "Dispersed power producing resources" is included. Consider including some examples also.
No
a)Only those Reactive Power devices applied for the purpose of BES support or BES voltage control should be included. A Reactive Power device connected at >100kV but used for the purpose of voltage support to local load and/or needed to support local networks should be excluded. b)We believe that this inclusion should be limited to dynamic devices with an aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) connected through a common point. c)See the response to question 2: The inclusion is unclear since it includes a certain voltage transformers, but excludes those that have E1 or E3 Exclusion criteria. Each exclusion criteria has multiple stipulations to its applicability, and then has a final inclusive reference to I3. Please make the wording exact and not dependent on clausal statements.
Yes
a)We suggest the wording “non-retail generation’ should be clarified with an explanation of why it is used in this exclusion. b)This exclusion criterion has multiple stipulations to its applicability, and also has a final inclusive reference to I3. Please make the wording exact and not dependent on clausal statements.
No
a)If retail generation fails to meet (i) or (ii) it appears that the retail generation would be included. The wording of (ii) is complex. Who will police this with retail behind-the-meter generators? b)Clarification needs to be provided for what is meant by E2 (ii), regarding generation on the customer’s side of the retail meter; otherwise we have trouble developing a position on this question.

No
a) The exclusion should also be extended to reactive resources needed to support the local area network (see response to Q10). It is also suggested that “local network” be renamed to “local area network” to better describe or distinguish itself from a wide-area network such as the BES. b)We would agree with the exclusion if the wording of the exclusion includes the following phrase (in italics) added at the end of E3 b): Power flows only into the LN: The LN does not transfer energy originating outside the LN for delivery through the LN “under normal operating conditions”.
No
a)Reactive Power devices connected 100 kV and above applied for the purpose of voltage support to local load and/or local area network should also be excluded.
Yes
a)We believe this revised definition is an improvement over the previous posting, a step in the right direction. b)The definition of the BES is referenced in several existing standards and the Statement of Compliance Registry Criteria. Our concern is how this revised definition will impact entity registration, i.e., how will the revised definition be integrated into the Compliance Registry Criteria. The implementation plan should include how the integration is going to occur. The Rules of Procedure exception process should be further defined or referenced in this definition. c)See Question 1 response: The general concept is sound, but the Inclusion and Exclusion sections create so many circular references it is virtually impossible to take a definitive stance on whether an asset is included or excluded to the BES definition. Please revise the inclusion and exclusion criteria to give pinpointed statements that are final and do not reference other criteria, that then again reference other criteria
Group
William D Shultz
Southern Company Generation
No
We have two concerns with the changes that are proposed. First, the use of "effective dates" and "compliance obilgations ... shall begin" in the implementation plan of the definition change is confusing. Effective date is usually used to indicate the mandatory and enforceable date of a new item. Second, a radial circuit from 100kV to a generating facility with two (2) 20 MVA generators seems to meet both the inclusion criteria (I2) and the exculsion criteria (E1). Which criteria is dominant, inclusion or exclusion?
Yes
Yes
Yes, provided that the minimum gross individual nameplate rating threshold is the same as the gross aggregate nameplate rating (currently > 75MVA). The MVA ratings are specified in many places in the BES definition, where a reference is made in I2 to using the Statement of Compliance Registry Criteria. We believe that the BES definition should point to the Statement of Compliance Registry Criteria and not include MVA values. We also believe individual units < 75MVA should be excluded unless they have been shown to be critical to BES reliability through a technical justification study performed by the transmission planning authority.
Yes
Yes
Yes
We believe that the size of the reactive power resource should be considered as a key factor to be part of BES. When considering generating resources, the size, e.g., greater than 75 MVA, was a key part of criteria to be included or excluded as BES. A similar approach should be applied when considering reactive power resources. Moreover, the language at the end of I5, "or through a transformer that is designated in Inclusion I1," appears to be redundant since the reactive power resources are connected to 100 kV or higher already without this additional language. The following language is suggested: I5 - Static or dynamic devices dedicated to supplying or absorbing Reactive Power that are connected at 100 kV or higher, or through a dedicated transformer with a high-side

voltage of 100 kV or higher, and with an aggregate continuous nameplate rating greater than 30 MVA.
No
Subpart (b) uses the term "generation resources" while subpart (c) uses the term "non-retail generation", why are these different terms used? Further, why is it important that the term "non-retail generation" is used in subpart (c)? In addition, the SDT needs to clarify what the term "non-retail generation" means. Is this what is commonly referred to as "customer owned" or "behind-the-meter" generation? The change in version 2 that removed the requirement that an excluded radial system have an automatic interruption device at the single point of connection to the rest of the BES creates a problem. Three-terminal circuits are common below 230 kV. The "tapped portion" should not be left out of the BES since a fault on that portion takes out the whole line. We propose this revised language in the first sentence on E1: “E1 - Radial systems: A group of contiguous transmission Elements that emanates from a single point of connection of 100 kV or higher, where the connection has an automatic interruption device,…” Exclusion E1, subpart (c) uses the phrase "an aggregate capacity of … less than or equal to 75 MVA …". Exclusion E3. subpart (a) provides that the local networks "do not have an aggregate capacity of … greater than 75 MVA …". Why are these phrases stated differently even though they appear to address the same resources?
Yes
Some editing is needed. The second part, (ii), of the and logic provided for the exclusion criteria E2 is confusing. The initial criteria, (i), seems to be adequate regarding impact to the BES. The criteria listed after "(ii)" does not seem to be relevant to the impact on the BES. What does it mean to provide standby, back-up, and maintenance power services to a generating unit or multiple generating units? It is unclear who is providing the power service. If this is needed, the statement needs to be simplified so it can be understood. What is the difference between the terms "retail Load" and "retail customer Load" as used in Exclusions E2 and E3?
Yes
What does the term "non-retail generation" mean? Can the term "non-retail generation" in E3a be changed to simply "generation."
Yes
Yes
1) On page 1, the year of the anticipated date for the BOT adoption is correctly 2012. 2) We believe that the last two sentences of the first paragraph of the Background Information section of the 2nd draft of the definition document is incorrect. The statements read: " It should be noted that the revised definition does not address functional entity registration or standards requirements applicability. Those are separate issues." The definition of the BES that is approved will govern the scope of the equipment that is relevant to many of the reliability standards. This issue cannot be separated from the applicability of the requirements of the reliability standards. What is the purpose of creating a continent wide definition of the BES if is is not to provide instruction the enetties subject to the requirements of the standards? Refer to these sample standard requirements to see that this definition already plays a major part in the applicability of the requirements: EOP-005-2 R1, R4; EOP-006-2 R1; EOP-008-1 R1; FAC-008-1 R1.2; and PRC-005-1a for example - there are many others.
Individual
Guy Andrews
Georgia System Operations Corporation
Yes
Yes
Yes
Yes

Yes
Yes
Yes
Yes
No
Item (b) is unclear: Although the first sentence says “Power flows only into the LN,” which suggests there will be no exports, the second sentence says “The LN does not transfer energy originating outside the LN for delivery through the LN,” which suggests it could deliver power originating within the LN. This would seem to be reasonable by comparison to E-2, so long as no more than 75 MVA is exported (which is indeed the limitation on the quantity of “non-retail generation” in the LN). On a related point, if the limit on connected generation is not intended to be a limit on possible exports, and therefore any power from interconnected non-retail generation must be sold within the LN, why does the limit need to be so low; why should the aggregate quantity of such internally-consumed generation be an issue? Also, is the “non-retail” designation intended to exclude customer-owned generation from the 75 MVA calculation?
Yes
No
Group
Brandy A. Dunn
Western Area Power Administration (Corporate Services Office)
Yes
Yes
Yes
Yes
No
Need to clarify the systems associated with this inclusion. The phrase “dispersed power producing resources” in inclusion (I4) is confusing and does not clearly communicate the focus of this inclusion. Without reviewing the reference information provided in the 1st draft comment form, it’s not clear that dispersed power producing resources refer to wind and solar resources. Recommendation: Include examples after phrase “dispersed power producing resources” for clarification to this inclusion. Change I4 to read - Dispersed power producing resources (i.e. wind and solar resources) with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a system designed primarily for aggregating capacity, connected at a common point at a voltage of 100 kV or above.
No
This inclusion should be worded to only include static or dynamic reactive devices which are necessary to meet the NERC Planning Criteria in terms of normal and post-disturbance voltage profiles. We shouldn't have to include smaller shunt cap banks and reactors which are used primarily for voltage support (not voltage collapse). Recommendation: Change I5 to read - Static or dynamic devices dedicated to supplying or absorbing Reactive Power which are necessary to meet the NERC Planning Criteria in terms of normal and post-disturbance voltage profiles that are connected at 100 kV or higher, or through a dedicated transformer with a high-side voltage of 100 kV or higher, or through a

transformer that is designated in Inclusion I1
Yes
Yes
Yes
Yes
Yes
Yes, the definition should also provide clarification on mobile equipment installed to support maintenance or equipment failures. Adding mobile equipment is a common practice for our industry and should be addressed in the definition to bring a general awareness and common understanding of the practice regarding the NERC standards. Recommendation: Add the following Exclusion to BES definition for mobile equipment. Exclude all mobile equipment on stand-by that has not been placed into service as well as all components of mobile equipment that does not meet the inclusion criteria for the primary function of the device being installed (e.g. ,battery bank on mobile transformer installed on radial feed would also be excluded)
Individual
Scott Miller
MEAG Power
Yes
MEAG agrees to the clarifying changes to the core definition in general, however, we maintain that 200kV and above is the correct bright line for the BES.
Yes
We agree in general with the revisions to the specific inclusions for transformers in I1; however, we believe the transformer voltage level should be 200kV or above.
Yes
We agree in general with the revisions to I2 for generation; however, we maintain that 200kV and above is the correct bright line for the Bulk Electric System.
No
We agree with the changes but believe clarity would be added by changing the word “identified” to “designated”.
Yes
No
We feel that this inclusion should be limited to dynamic devices with an aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) connected through a common point.
Yes
We suggest the wording “non-retail generation’ should be clarified with an explanation of why it is used in this exclusion.
No
Clarification needs to be provided for what is meant by E2 (ii), regarding generation on the customer’s side of the retail meter; otherwise we have trouble developing a position on this question.
No
We would agree with the exclusion if the wording of the exclusion includes the following phrase (in italics) added at the end of E3 b): Power flows only into the LN: The LN does not transfer energy originating outside the LN for delivery through the LN “under normal operating conditions”.
Yes
Yes

The definition of the BES is referenced in several existing standards and the Statement of Compliance Registry Criteria. We are concerned how this revised definition will impact entity registration, i.e., how will the revised definition be integrated into the Compliance Registry Criteria. The implementation plan should include how the integration is going to occur.
Group
David Dockery or John Bussman
AECI
Yes
In general, we agree with this revision. We however believe the correct voltage thresholds to be, transformer primary voltage of 200 kV or higher and secondary voltage of 100 kV or higher.
No
“100 kV or above” should be modified to “200 kV or above with a registered rating of 150 MVA or greater.”
Yes
The word “identified” should be replaced with “designated”.
Yes
In general, we agree with this revision. However, the aggregate MVA threshold should be 150 MVA or greater, and threshold voltage level should be 200kV or higher.
Yes
This inclusion should be limited to reactive devices 150 MVAR or greater (gross aggregate nameplate rating) connected through a common point at the 200 kV level or higher level.
Yes
This inclusion should be limited to reactive devices 150 MVAR or greater (gross aggregate nameplate rating) connected through a common point at the 200 kV level or higher level.
Yes
Remove “non-retail” because it is irrelevant to reliability. In general, we agree with the remaining concepts. However transformer voltage threshold should be 200 kV or higher, the power thresholds should be 150 MVA or greater.
Yes
E2 “retail meter” should read “retail meter(s)”. (i) Should be reworded as “the maximum net impact to the BES does not exceed 150 MVA, connected at 200 kV or higher.” (ii) if we understand this clause correctly, we believe our proposed (i) wording will handle the issue. Also, all load’s inclusion, within a BA, is dictated within the BAL standards and so remove entirely or additional clarification is needed.
Yes
We would agree in principle with the LN exclusion if the wording of the exclusion includes the following phrase (in italics) added at the end of E3 b): Power flows only into the LN: The LN does not transfer energy originating outside the LN for delivery through the LN “under normal operating conditions”. Also, the correct BES threshold level should be 200 kV rather than 100 kV. Finally, the nomenclature of Flowgate (FG) components appears to be confused. AECI believes E3 c) should be changed to read “contingent Facility” rather than “monitored Facility”. Although unspecified within the NERC Glossary, we believe FG monitored Facilities are typically the impacted facilities in danger of overload, while the contingent facilities are those which, if lost, would cause the monitored Facility to become overloaded. As currently written, a formerly qualified LN could later become disqualified due to an external entity’s ill-designing a parallel EHV line, thereby causing one or more potential (N-1) overloaded Facility within that LN. Further, operational FG loading conditions are often relieved by opening-up LN elements near the monitored Facility, with little impact upon BES reliability, yet with lesser reliability to the underlying LN loads. This implies that the monitored elements of Flowgates are typically non-essential to the BES reliability. AECI can support “contingent” FG Facilities disqualifying a LN claim, but it cannot support “monitored” Facilities as disqualifying factors for rejecting a LN claim.
Yes
Ownership is irrelevant, so “owned and operated by the retail customer solely for its own use”, should

be replaced by “owned and operated solely in conjunction with specific industrial customer loads.”
Yes
: AECI supports the bright-line concept, but believes the SDT should adopt a core voltage threshold of “200 kV or higher”, and MVA capacity of “150 MVA or greater”. A proper threshold is critical, because an inappropriately low threshold will divert significant industry attention and resource away from what truly benefits the BES reliability. (The number of facilities tend to rise more geometrically than linearly as the voltage threshold drops.) We believe that an evaluation of the transmission-line Surge Impedance Loading (SIL), at various kV levels, could provide technical insight as to why many industry planning engineers believe sub-230kV Facilities, in general do not belong within the BES. AECI suggests that the SDT consider a more consistent bright-line facility threshold of 150 MVA capability for all equipment. This would include transmission lines as well, where an Surge Impedance Loading analysis demonstrates that lines below 230 kV, can support 150 MVA flow up to 280 miles (applying 1.1 p.u. line-loadability of SIL, IEEE Transactions on Power Apparatus and Systems, Vol.PAS-98, No.2 March/April 1979, p 609, Figure 7),without additional reactive compensation. In comparison, single-conductor 138 kV lines, in same table, can support 150 MVA transfers no more than 50 miles, while 345 kV lines are capable of supporting 150 MVA transfers well over 600 miles.
Individual
Paul Titus
Northern Wasco County PUD
Yes
We agree with the changes. We must point out that the overall flow, or how one proceeds through the inclusions and exclusions is not clear. Can an item that meets an inclusion be subsequently excluded? If so, this needs to be explicitly stated. So far, we only have the flow chart produced by the ROP team that indicates otherwise (http://www.nerc.com/docs/standards/sar/20110428_BES_Flowcharts.pdf). This was made evident by the question at the 9/28 webinar regarding an I5 capacitor on an E3 local network. The questioner thought the capacitor was BES per I5, but the answer was that it was excluded per E3. We can find no support for the answer given. The listing of specific exclusions within I1 (exception proves the rule) argues for questioner’s stance that the capacitor is BES as written. Also, if included items could subsequently be excluded, they would be no different from any other item that met the voltage threshold of 100kV. There would be no need for any of the inclusions if all possible outputs from the inclusion tests go to the same exclusion test inputs. We strongly support the addition of the language regarding local distribution facilities, as it matches congressional intent to leave the regulation of these facilities to state and local authorities.
Yes
Northern Wasco County PUD strongly agrees with this inclusion as written. It is consistent with the recent PRC-004 and PRC-005 interpretation and the NERC definition of Transmission. We believe the recent changes to this inclusion add clarity.
No
Referencing the Criteria which in turn references the BES definition creates a circular definition. Northern Wasco County PUD encourages the adoption of specific thresholds that are technically justified. We also note that the Criteria and its revisions do not go through the standards development process, so that thresholds may change with little warning and without triggering an implementation plan for facilities that may be swept into the BES as a result.
Yes
We agree with the removal of the voltage language, since the inclusions and exclusions apply only to equipment over 100 kV.
Yes
Northern Wasco County PUD agrees both with the inclusion and with the revised language. The revised language removes the need to provide a separate definition for “Collector System”.
No
While we agree that reactive devices of sizable capacity connected at 100 kV or higher are needed for BES reliability, Northern Wasco County PUD fails to see why this inclusion is needed as they are already captured by the 100 kV threshold. We would propose instead to eliminate this inclusion and substitute an exclusion for smaller capacity devices. If the SDT really believes an inclusion for reactive

devices is needed, we suggest the SDT provide a technically justified capacity limit within the inclusion. In addition we suggest also including the phrase "…unless excluded under Exclusion E1, E2 or E4" similar to that in I1. Please see the answer to Q1 above Q10 below.
No
Northern Wasco County PUD notes that a new term has been introduced, "non-retail generation," with no definition provided. The answer to the question on this during the 9/28 webinar indicated that non-retail generation was behind the retail customer's meter. We can see no reason why the net-metered PV systems should count toward the aggregate limit (exceeding the limit means no exclusion) while a non-blackstart thermal plant doesn't (the radial system is excluded if any amount of load is present). We have also heard the SDT meant just the opposite of what was stated in the webinar. We ask that a reasonable definition for non-retail be provided within the BES definition document. We strongly agree that radial systems should be excluded and that the presence of normally open switching devices between radial systems should not cause them to be considered non-radial. Such a result would cause the removal of these devices to the detriment of the local level of service. We note that the singular "A normally open switching device" is used and suggest that an allowance be made for the possibility of multiple devices. "Normally open switching devices…"
Yes
No
We strongly agree that local networks should be excluded, since they act much like the radial systems excluded in E1 while providing a higher level of service to customers. These networks should not be discouraged in the name of reliability. We again object to the introduction of the new confusing term "non-retail generation" with no definition provided.
No
Please see Northern Wasco County PUD's answers to Q1 and Q6. Any device that might be excluded under E4 has already been included per I5. Unless I5 is removed, or rewritten as suggested above; this exclusion will exclude nothing.
Yes
In order to help meet the fast approaching target date, Northern Wasco County PUD will be voting affirmative in this ballot, with the hope these comments will be addressed in Phase II. If the ballot should fail, please address these comments in this phase. Thanks to the team for their good work.
Group
Janelle Marriott Gill
Tri-State Generation and Transmission Assn., Inc., Energy Management
Yes
We believe that the new definiation is a good clarification.
Yes
No
1. The parenthetical phrase regarding the ERO SCRC is not clear. Is the intent that the inclusion applies to any generating resource that is required to register as a Generator or Generator Operator per the ERO SCRC? Or was a reference to the 75 MVA threshold inadvertently omitted? It also seems that it wouldn't need to be in parentheses, just make it a phrase in the sentence. 2. The wording of the sentence after the parenthetical phrase is also worded awkwardly. Suggest changing it to "including the generator terminals and all electrical equipment up to and including the high side of generator step up transformers, if they are connected at a voltage of 100 kV or higher.
Yes
Yes
No
There should be a limitation on what reactive components needs to be included. The limits could be based on capacity of the units or on the voltage step that occurs upon switching of the device

Yes
Yes
No
1. b) should be reworded to “Normally there is power flow only into the LN: The LN is not normally used to transfer power originating outside of the LN for delivery through the LN.” There could be conditions inside the LN, such as large loads shut down for maintenance, which would allow the parallel transmission Elements to allow power to flow through the LN. Those conditions would have no negative or adverse effect on the BES. 2. Capitalize “Network” at the beginning of the Exclusion
Yes
No
Group
Will Smith
Midwest Reliability Organization
Yes
Yes
No
Unless excluded under E2.
Yes
Yes
I4 – Dispersed power producing resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating) utilizing a system designed primarily for aggregating capacity, connected at a common point at a voltage of 100 kV or above starting at the point of aggregation to 75 MVA or more through to the point of interconnection at 100 kV or above.”
No
NSRF recommends the following proposed language for I5 to address the concern: "I5 -Static or dynamic devices which 1) are dedicated to supplying or absorbing Reactive Power that are connected at 100 kV or higher, or through a dedicated transformer with a high-side voltage of 100 kV or higher, or through a transformer that is designated in Inclusion I1 and 2) are pertinent to meeting the NERC Planning Criteria in terms of normal and post-disturbance voltage profiles."
Yes
Unless there is a specific reason to the contrary the NSRF suggests that E1b include the qualification of “aggregate capacity of non-retail generation less thatn or equal to 75 MVA” be added to be consistent with the wording in E1c.
Yes
No
THE NSRF suggestion considering a different approach for the power flow criteria in I3b. I3b: No form Power Transfers are scheduled out of, or thorough, the LN in the operating horizon [for BES designations applicable to the operating horizon] and not Firm Power Transfers are reserved to flow out of , or through, the LN in the planning horizon [for BES designations applicable to the planning horizon].
Yes
Yes

NSRF recommends that the following statement be added after I5. If an element is not included based upon the core definition or I1 – I5, the elements is not consider to be a part of the BES.
Individual
Linda Jacobson-Quinn
Farmington Electric Utility System
Yes
Yes
No
FEUS is concerned I2 is dependent on the Statement of Compliance Registry Criteria (SCRC). Modification of the SCRC is not required to go through the same process of modification of a Standard but section 1400 of the NERC Rules of Procedure. Section 1400 does allow for industry comment and requires multiple tiers of approval. However, it seems by changing the SCRC generating resources may be included or excluded from the BES – without requiring modification to the definition of the BES through the Standards Development Process. In addition, Page 4 Section I of the SCRC is dependent on the NERC definition of the BES. Logically, the SCRC should be dependent on the definition of the BES not the inverse.
Yes
No
FEUS feels additional clarity should be added to I4. It appears I4 is not intended to include each individual wind turbine generating unit in a wind farm as a BES element, but rather to include the point at which the aggregation becomes large enough to meet the aggregate capacity threshold of 75MVA.
No
I5 should be modified to identify a minimum Reactive Power threshold for static or dynamic devices. As drafted a 1 MVA device supplying or absorbing Reactive Power that is connected at 100 kV or higher would be included in the BES.
Yes
No
E2 should be modified to include a size and threshold for individual generating units, similar to that identified in I2. As currently worded E2 places the same threshold (75 MVA) on a single generating unit as is placed on multiple generating units.
Yes
Yes
No
Individual
Allen Rinard
South Houston Green Power, LLC
No
South Houston Green Power, LLC [SHGP], a registered generator owner in ERCOT, submits the following comments: Cogeneration facilities, some of which are well over 75 MW in size, are located at a number of industrial sites owned by SHGP and its affiliates. Some of these cogeneration facilities generate power that is distributed within the industrial site and used for manufacturing plant operations. In some instances, excess power not required for plant operations is delivered back into the electric transmission grid through the tie line(s) connecting the industrial site to the grid. While the tie lines and some of the internal lines at these industrial sites operate at 100kV or higher, they

do not perform anything that resembles a transmission function. Rather than transmit power long distances from generation to load centers, the tie lines and internal lines perform primarily an end user distribution function consisting of the distribution of power brought in from the grid or generated internally to different plants within each industrial site. In some cases, the facilities also perform an interconnection function to the extent they enable power from cogeneration facilities to be delivered into the grid. The voltage of the tie lines and internal lines at these industrial sites is dictated by the load and basic configuration of each site. Higher voltage lines are used when necessary to meet applicable load requirements or to reduce line losses. That does not mean that such lines perform a transmission function. SHGP would oppose any BES definition that would by default subject either the tie lines or the internal lines at such industrial sites to the mandatory reliability standards applicable to Transmission Owners and Transmission Operators when they more readily fit the Generation Owner / Generation Operator standards. Such an expanded BES definition would subject registered entities to substantial compliance costs and create potential exposure to penalties, but would not likely substantially enhance the reliability of the BES. Perhaps such costs and exposure could be justified in exceptional circumstances, if subjecting these facilities to compliance with reliability standards were to result in a material increase in reliability of the BES. There is reason to believe, however, that in many cases the additional reliability benefit would be minimal at best. The tie lines and internal lines at industrial sites owned by SHGP and its affiliates have been operated for years as end user distribution and interconnection facilities, and practices and procedures have developed over the years that have enabled such operations to achieve a high degree of reliability for such sites. Requiring these facilities to now operate in a different manner as transmission facilities may well result in a degradation of the reliability of the manufacturing plants located at such sites. For example, outages would have to be coordinated with the RTO, which may not be interested in coordinating such outages with scheduled manufacturing plant outages. In light of these considerations, SHGP agrees with the proposed revisions to the core definition, particularly the proposal to include a sentence expressly excluding facilities used in the local distribution of electric energy, provided it is understood that end user-owned delivery facilities located “behind-the-meter” are, regardless of voltage level, by default outside the scope of this definition.
Yes
No
SHGP agrees with the proposed revisions to Inclusion I2, but requests the following phrase added at the end “unless excluded under Exclusion E2”.
Yes
No
Further clarification of “Dispersed power producing resources” is needed. Multiple small resources should not be included. The following phrase should be added at the end of Inclusion I4 “unless excluded under Exclusion E2”.
No
The phrase should be added at the end “unless excluded under Exclusion E4”.
No
SHGP generally supports with the proposed revisions to Exclusion E1, but suggests several additional clarifying revisions should be made. First, the phrase “a single point of connection” in the introductory sentence should be revised to read “a single point of connection (including multiple connections to the same ring bus or substation where the energy normally flows in the same direction)”. This revision is intended to ensure that radial systems which involve multiple parallel lines and are designed to operate as a single radial system, but that nevertheless connect to the grid through more than line for reliability. Second, for this same reason, an additional (i.e., second) note should be added to the end of Exclusion E1 that reads as follows: “Note, a normally closed switching device that enables multiple lines emanating from the same grid ring bus or different grid buses to operate as a single radial system does not affect this exclusion.” Third, the phrase “with an aggregate capacity of non-retail generation less than or equal to 75 MVA should be eliminated.
Yes
SHGP generally agrees with the proposed revisions to Exclusion E2, but believes that a clarifying

revision should be made. Substitute “transmission grid” for “BES” in the phrase “provided to the BES” to insure that the metering is to the grid.
SHGP would like to broaden the scope of Local Networks. If a Local Network does not allow transfer of Bulk Power across the Interconnected System, then the Local Network should be excluded regardless of the amount of generation behind the meter. Often, large industrial sites install large combined Heat & Power cogeneration units due to a hefty steam load. Subjecting industrial facilities to additional reporting and coordination efforts [other than those already required by the TO and RTO] may have little, if any, increase in grid reliability. The 75 MVA (gross nameplate rating) needs to be eliminated. To date, none of the Regional Entities has suggested that SHGP or its affiliates register as a Transmission Owner or Transmission Operator with respect to any SHGP or affiliated delivery facilities.
Yes
Group
William Bush
Holland Board of Public Works
Yes
Holland BPW believes that the proposed definition is an improvement to the status quo, but requires additional work. The thresholds for classifying generators as Bulk Electric System (BES) must be revised. There was little technical support for proposing the current thresholds. No greater evidence than that which was proffered for the initial thresholds should be required to modify those standards. Four years of compliance experience and industry feedback support increasing these thresholds. Holland BPW supports increasing the generation thresholds from 20 MVA (individual gross nameplate) and 75 MVA (aggregate gross nameplate) to not less than 100 MVA (individual gross nameplate) and 300 MVA (aggregate gross nameplate). Holland BPW recognizes that the SDT and NERC have committed to making these revisions as part of “Phase II”, and are asking the industry to trust that such an initiative will not succumb to work on other initiatives. However, even if work on this initiative commences immediately, entities that should be removed from the Compliance Registry face costs of compliance or the risk of non-compliance penalties even though their facilities are not necessary for the reliable operation of the interconnected transmission system. That said, there are two significant improvements in the revised draft. First, it is essential to make clear that the “Inclusions” and “Exclusions” apply only to the first sentence of the core definition (i.e., “Transmission Elements”). The revised definition appears to address this. By placing “Unless modified by the lists shown below” at the beginning of the first sentence of the definition clarifies that the lists of Inclusions and Exclusions pertain only to “Transmission Elements” that would otherwise be included or excluded from the core definition. The revised definition and the lists of Inclusions and Exclusions do not and cannot be applied in a manner to pull in facilities used in the local distribution of electric energy as BES facilities because Congress, by statute, has already determined that such facilities are outside of NERC’s reach, as recognized by the second sentence of the definition. Second, Holland BPW supports the addition of the second sentence of the core definition that states, “This does not include facilities used in the local distribution of electric energy.” This language provides necessary recognition to the jurisdictional limitation provided for in Section 215 of the Federal Power Act, and as recognized by the FERC in Orders 743 and 743-A (see, e.g., ¶¶ 58-59 in 743-A). Finally, if the revised definition goes forward, it is imperative that the rules of procedure providing for an exception process be adopted at the same time.
No
It is essential that regional entities and NERC recognize that “facilities used in the local distribution of electric energy” are not included in the definition of BES, regardless of the gross individual or gross aggregate nameplate rating of generation resources. While the addition of the second sentence in the core definition makes this clarification, Holland BPW believes it is necessary that regional entities and NERC recognize that neither this Inclusion nor any of the Inclusions may be used as a basis to compel registration and compliance in such instances, regardless of the size of the generators. The statutory exemption of facilities used in the local distribution of electric energy is not limited by generator number or capability. NERC’s definitions cannot impose limitations that are not set forth in the

statute. For purposes of the exclusion of facilities that might otherwise meet the definition of BES, the thresholds for determining what generating resources constitute BES facilities should be modified from the current levels (gross individual nameplate capacity of 20 MVA or gross aggregate nameplate rating of 75 MVA). Holland BPW supports modification of the thresholds to not less than 100 MVA (gross individual nameplate capacity) and 300 MVA (gross aggregate nameplate).

Yes

Holland BPW supports the exclusion of radial systems from the BES definition, but believes that further clarification is necessary. First, the deletion of "originating with an automatic interruption device" is a step in the right direction. However, "emanates from a single point of connection" could be too narrowly interpreted (i.e., multiple buses within a single substation could be viewed as multiple points of connection). Holland BPW proposes the following modification: "emanates from a single substation connected to the BES at 100 kV or higher…" Entities whose only connection emanates from a single substation and otherwise meet the BES definition should not be denied exclusion under E1 solely because they connect to multiple buses at that single substation. Additionally, adoption of "E3 – Local Networks" renders specious any argument that claims that connecting to multiple buses within a single substation makes a material difference for reliability purposes since local networks would have multiple connections anyway. Additionally, it is not clear why it is necessary to include the note at the end of the revised definition. ("A normally open switching device between radial systems, as depicted on prints or one-line diagrams for example, does not affect this exclusion.") This raises questions as to what "normally open" means, and whether the only evidence demonstrating what "normally open" means will be prints or one-line diagrams. Further, it is not entirely clear what is meant by the language "does not affect this exclusion". If the note remains, it should be modified to read something like, "a normally open switching device between radial systems does not prevent application of this exclusion." Finally, the generation threshold limit in E1(b) and E1(c) should be revised as discussed in response to Q1. Specifically, the proposed threshold of 75 MVA for this exclusion should be raised to not less than 300 MVA in both E1(b) and E1(c).

Yes

Holland BPW supports the exclusion of Local Networks (LN) from the definition of BES. Such systems are generally not necessary for the reliable operation of the interconnected transmission network. However, some revisions are necessary. Holland BPW believes that E3(a) and E3(b) can and should be eliminated, provided E3(c) remains. E3(c) provides that an LN is BES if it is classified as a Flow Gate or Transfer Path. The bases for removing E3(a) and E3(b) are as follows: (1) Provision E3(a) establishes a 75 MVA limit on connected generation. This is inconsistent with the concept of a LN and should be removed. If not removed, it should be increased to not less than 300 MVA, consistent with the discussion in response to Q1. If an LN does not accommodate bulk power transfer across the interconnected system, the amount of generation that exists and is distributed within that system is immaterial for purposes of the reliable operation of the interconnected transmission system. During the NERC Webinar, NERC representatives suggested that placing an upper limit on generation within a LN might be desirable based upon an assumption that if that entity's internal generation is lost, then replacement generation would have to come from the BES, and could therefore affect reliability. This assumption has not been substantiated. In most instances, generation resources are dispersed throughout the LN – it is unlikely an event would result in the loss in the amount of the aggregate generation. Additionally, LNs have local load shedding and system restoration plans for such contingencies. (2) E3(b) is unnecessary and should be removed. The proposed language in E3(b) appears to be concerned with flows originating from outside of the LN, coming into the LN, and then exiting the LN to loads outside of the LN. As noted above, E3(c) appears to address this concern. If E3(b) is maintained, then the introductory clause ("Power flows only into the LN:") should be deleted, because it is inconsistent with the second clause ("The LN does not transfer energy originating outside the LN for delivery through then LN.") If E3(b) is retained, Holland BPW supports the second clause ("The LN does not transfer energy originating outside the LN for delivery through then LN") because it appears to be the portion of the provision that addresses the concern about flows into, through, and then out of, the LN. (3) E3(b) should also be removed or modified because it fails to recognize typical

municipal system operations. An LN may have internal generation that is less than its peak load but in excess of off-peak or holiday load levels. The language “Load flows only into the LN” does not recognize this situation and prevents an LN from making the most economic use of surplus generation. There are no reliability reasons to discourage such sales since with or without such transactions, this generation is not necessary for the reliable operation of the interconnected transmission system.
Group
Katie Coleman
Andrews Kurth, LLP
Yes
Yes
Yes
The interplay between Inclusion I2, which references the Statement of Registry Compliance, and Exclusions E1-E3 is unclear. Under the Registry criteria, “a customer-owned or operated generator/generation that serves all or part of retail load with electric energy on the customer’s side of the retail meter may be excluded as a candidate for registration … if (i) the net capacity provided to the bulk power system does not exceed the criteria above.” It appears that the SDT intended to invoke this provision by referencing the Statement of Registry Compliance, which counts only the “net” capacity provided, by referencing the Statement of Compliance Registry Criteria. However, Exclusions E1 and E3 exclude generation on the basis of “gross nameplate ratings.” For customer-owned facilities, this treatment is inconsistent with netting treatment provided in the Statement of Registry Compliance. Exclusions E1-E3 should be revised to reference the Statement of Compliance Registry Criteria as well so that customer-owned generation is included or excluded based on its net capacity to the grid rather than its gross nameplate capacity. TIEC also supports revisiting and potentially raising the thresholds that trigger registration as a Generation Owner or Operator. TIEC understands that the SDT has decided to maintain the status quo as reflected in NERC’s Registry Criteria at this time. TIEC looks forward to addressing potential modifications to the thresholds in the appropriate context.
Yes
Yes
Yes
Yes
As noted in response to Question 3, above, Exclusion E1 would only allow exclude radial systems with “aggregate capacity of non-retail generation less than or equal to 75 MVA (gross nameplate rating).” The reference to “non-retail” generation in subsection (c) indicates that the SDT may have intended to preserve the “netting” approach set forth in the Statement of Registry Compliance, but this should be made clearer. The description in subsection (c) should be revised to exclude “Where the radial system serves Load and includes generation resources not identified in Inclusions I2 or I3,” and the remainder of that sentence referencing a 75 MVA gross nameplate rating should be removed. This will provide a reference back to the Statement of Registry Compliance and clarify that only net capacity is considered for customer-owned facilities.
Yes
Please see the response to Question 3, above. Unlike exclusions E1 and E3, this exclusion refers specifically to the “net capacity” provided, which is consistent with existing treatment for generation that is netted against internal load under the Statement of Registry Compliance.
Yes

As noted in response to Question 3, above, subsection (a) of Exclusion E3 would only exclude Local Networks with “aggregate capacity of non-retail generation less than or equal to 75 MVA (gross nameplate rating).” The reference to “non-retail” generation in subsection (a) indicates that the SDT may have intended to preserve the “netting” approach set forth in the Statement of Registry Compliance, but this should be made clearer. The description in subsection (a) should be revised to exclude “Where the radial system serves Load and includes generation resources not identified in Inclusions I2 or I3,” and the remainder of that sentence referencing a 75 MVA gross nameplate rating should be removed. This will provide a reference back to the Statement of Registry Compliance and clarify that only net capacity is considered for customer-owned facilities. TIEC also disagrees with the 300 kV upper limitation on transmission elements within a Local Network. Consistent with TIEC’s comments to FERC, if these facilities are serving a distribution function, their voltage level is irrelevant. The transmission versus distribution distinction should be based on function, not voltage level. The remainder of this exclusion clarifies what constitutes a distribution function, so the 300 kV limit is unnecessary and should be removed.
Yes
No
Individual
Angela P Gaines
Portland General Electric Company
Yes
Yes
Yes
Yes
Yes
PGE requests additional clarity in the wording of Inclusion 4. Inclusion 4 is not intended to include each individual wind turbine generating unit in a wind farm as a BES element, but rather to include the point at which the aggregation becomes large enough to meet the aggregate capacity threshold of 75 MVA. However, the response to comments from the last comment posting and the current wording of Inclusion 4 does not provide sufficient clarity to answer this question.
Yes
Yes
Yes
Yes
PGE agrees with Exclusion E3, but believes additional clarification is necessary to facilitate a complete understanding and application of the exclusion criteria. First, there is no specific definition of “non-retail” generation provided. Additionally, E3 b) states “Power flows only into the LN: The LN does not transfer energy originating outside the LN for delivery through the LN.” PGE believes that a local network should still qualify for the LN exclusion if power may flow out of the LN at a discrete point or certain discrete points during abnormal operating conditions, but power still flows into the LN on an aggregate basis during all operating conditions, and power flows only into the LN at all discrete points during normal operating conditions.
Yes

No
Individual
Andrew Gallo
City of Austin dba Austin Energy
Yes
In an effort to avoid potential confusion and provide clarity we believe the sentence, “This does not include facilities used in the local distribution of electric energy,” more appropriately fits under the “exclusions” (rather “inclusions”) section.
Yes
We believe additional clarification of transformers to be included may be achieved with respect to auto transformers, phase angle regulators and generator step-up transformers by adding the following sentence: All transformers (including autotransformers, voltage regulators, and phase angle regulators) with primary and secondary terminals operated at or above 100kV, unless excluded by E1 or E3.
No
We recommend removing the reference of the ERO Statement of Compliance Registry Criteria (Registry Criteria). The BES Definition should be the governing document and independent of ERO registration requirements. The definition should drive what appears in the Registry Criteria. Additionally, we support using the BES Phase 2 technical analysis to identify and provide technical support for determining the appropriate minimum MVA rating that a single unit, or the aggregation of multiple units, must meet to be part of the BES.
Yes
We recommend rewording Inclusion I3 as follows: “Only Primary Blackstart resources designated as part of the Transmission Operator’s restoration plan.” We have concerns that making all Blackstart generation either primary or secondary BES elements creates an incentive to remove those secondary Blackstart capable units in an effort to avoid BES inclusion. We believe that making the primary Blackstart unit the only BES element will remove this incentive. In so doing, this will allow the secondary Blackstart units to remain in the Transmission Operator’s plan and training program as an alternate tool for the Transmission Operator to restore the system.
Yes
Yes
Appropriate MVAr level should be established. Reactive resources should be treated similar to generation criteria and included in the technical studies associated with the Phase 2 technical analysis in order to establish the appropriate MVAr level included as BES.
Yes
For the E1 reference “Note,” we would benefit from additional clarification identifying the treatment of a normally open switch and offer the following: “Radial systems shall be assessed with all normally open switching devices in their open positions.” The wording in Exclusion 1-c should more clearly reflect what is intended by using the term “non-retail generation.” Also, as with the technical justification for Inclusions I2 and I4, we recommend that the generation threshold, i.e. gross nameplate values, be deferred to Phase 2.
Yes
Yes
We prefer to hold reference to gross nameplate rating/threshold values until generation technical justification is completed as part of Phase 2; these studies should apply to any real or reactive power threshold reference. For Exclusion E3-b using the phrase “[p]ower flows only into the Local Network” is too restrictive. An allowable MW threshold of Local Network power producing resources should be deferred to the Phase 2 BES technical analysis. Where no generation is present in the Local Network, it is recommended that an allowance for residual flow through the Local Network.
Yes

No
Individual
Martin Kaufman
ExxonMobil Research and Engineering
Yes
However, in Order 743, FERC directed NERC to further delineate the differences between transmission systems (used to transfer electric power between regions) and distribution systems (used to deliver electric power locally). The inclusions and exclusions defined in the draft BES definition are a step in the right direction, but further work is necessary during Phase II to meet the intention of the order. Additionally, the SDT should consider defining terms, such as non-retail generation, or providing references (footnotes) that elaborate on the referenced concept.
Yes
The Inclusion I1 contains the phrase “unless excluded under Exclusion E1 or E3”. While recognizing that this is a welcomed clarification on how I1 interacts with the Exclusion section, it is inconsistent with Inclusions I2 through I5. The BES SDT team should consider how to standardize the language around the interactions between the Inclusions and Exclusions (perhaps add an “unless” qualifier for each Inclusion).
No
The Inclusion I1 contains the phrase “unless excluded under Exclusion E1 or E3”. While recognizing that this is a welcomed clarification on how I1 interacts with the Exclusion section, it is inconsistent with Inclusions I2 through I5. The BES SDT team should consider how to standardize the language around the interactions between the Inclusions and Exclusions (perhaps add an “unless” qualifier for each Inclusion).
Yes
Yes
The BES SDT should clarify the difference between “dispersed power producing resources” and “generation resources” in such a manner that it is clear that an industrial plant containing providing the BES with power from ten 7.5MVA machines connected at a common point at a voltage of 100 kV or higher meets the qualifications for generation resources and does not meet the qualifications for a “dispersed power producing resource”.
No
The BES SDT should work on clarifying the differences between Inclusion I5 and Exclusion E4. The phrase “solely for its own use” in Exclusion E4 is vague and open to interpretation. It is unclear whether equipment, such as power factor correction facilities, surge capacitors located in motor terminal boxes and excitation capacitors installed for use by a motor located on the low side of a 138 kV primary transformer would be excluded from the BES. Is the intent of this requirement to capture “reactive resources” that provide VARs to the BES in regions that exhibit voltage stability issues?
Yes
The removal of the requirement for an automatic fault interrupting device from this requirement is a welcomed change from the first posting. This Exclusion helps preserve the current NERC Registry and explicitly excludes many facilities used in the distribution of electric power.
Yes
Yes
Exclusion E1 and E3 aid in the delineation of distribution and transmission facilities. However, we request that the BES SDT review paragraphs 108 and 109 of FERC Order 743. In order to meet reliability target requirements to safely and economically operate manufacturing and production facilities, many industrial facilities are fed by two or more utility transmission lines that originate at independently fed utility substations. Due to the magnitude of an industrial site’s load, these transmission lines are typically designed to operate at levels in excess of 100 kV at the request of the

utility company. These transmission lines typically terminate into an interconnection facility, owned by the industrial facility, that spot networks the transmission lines via a ring buss or breaker and a half substation within the industrial facility's private use network in order to serve the load of the facility's private use network. These private use networks typically satisfy the requirements set forth in the definition of a Local Network (power flows in, not a flowgate, etc.); however, the term "non-retail generation" is not a term that is implicitly defined or consistent with this documents use of "net capacity provided…" phrasing in similar exclusions.
Yes
The BES SDT should work on clarifying the differences between Inclusion I5 and Exclusion E4. The phrase "solely for its own use" in Exclusion E4 is vague and open to interpretation. It is unclear whether equipment, such as power factor correction facilities, surge capacitors located in motor terminal boxes and excitation capacitors installed for use by a motor located on the low side of a 138 kV primary transformer would be excluded from the BES.
Yes
It would be worthwhile to explain the relationship (timeline) between the BES Definition implementation plan and the compliance implementation plan proposed in the BES RoP team's new Appendix 5C for the NERC Rules of Procedure.
Individual
David Kahly
Kootenai Electric Cooperative
Yes
Kootenai Electric Cooperative ("KEC") believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System ("BES") that markedly improves both the existing definition and the SDT's previous proposal. KEC therefore strongly supports the new definition, although our support is conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT, which would address a number of important technical issues that have been identified in the standards development process to date. KEC strongly supports the following elements of the revised BES definition: (1) Clarification of how lists of Inclusions and Exclusions applies: The revised core definition moves the phrase "Unless modified by the lists shown below" to the beginning of the definition. This change makes clear that the Inclusions and Exclusions apply to all Elements that would otherwise be included in or excluded from the core definition (i.e., "all Transmission Elements operated at 100 kV or higher and Real Time and Reactive Power resources connected at 100 kV or higher") and eliminates a latent ambiguity in the first draft of the definition, discussed further in our comments on the first draft. (2) The exclusion for Local Distribution Facilities. As the starting point for the BES definition, KEC supports use of the phrase "all Transmission Elements" and the qualifying sentence: "This does not include facilities used in the local distribution of electric energy." This language helps ensure that FERC, NERC, and the Regional Entities ("REs") will act within the jurisdictional constrains Congress placed in Section 215 of the Federal Power Act ("FPA"). In Section 215(a)(1), Congress unequivocally excluded "facilities used in the local distribution of electric energy" from the keystone "bulk-power system" definition. 16 U.S.C. § 824o(a)(1). Including the same language in the definition helps ensure that entities involved in enforcement of reliability standards will act within their statutory limits. In addition, as a practical matter, inclusion of the language will help focus both the industry and responsible agencies on the high-voltage interstate transmission system, where the reliability problems Congress intended to regulate – "instability, uncontrolled separation, [and] cascading failures," 16 U.S.C. § 824o(a)(4) – will originate. At the same time, level-of-service issues arising in local distribution systems will be left to the authority of state and local regulatory agencies and governing bodies, just as Congress intended. 16 U.S.C. § 824o(i)(2) (reserving to state and local authorities enforcement of standards for adequacy of service). For similar reasons, KEC believes use of the phrase "Transmission Elements" as the starting point for the base definition is desirable because both "Transmission" and "Elements" are already defined in the NERC Glossary of Terms Used, and the term "Transmission" makes clear that the BES includes only Elements used in Transmission and therefore excludes Elements used in local distribution of electric power. (3) Appropriate Generator Thresholds. In the standards development process, it has become apparent that the thresholds for classifying generators as BES in the current NERC Statement of

Compliance Registry Criteria ("SCRC") (20 MVA for individual generators, 75 MVA for multiple generators aggregated at a single site), which predate the adoption of FPA Section 215, were never the product of a careful analysis to determine whether generators of that size are necessary for operation of the interconnected bulk transmission system. Ideally, such an analysis would be conducted as part of the current standards development process. KEC recognizes that, given the deadlines imposed by FERC in Order No. 743, it will not be possible for the SDT to conduct such an analysis within the time available. Accordingly, KEC agrees with the approach taken by the SDT, which is to propose a Phase II of the standards development process that would address the generator threshold issue and several other technical issues that have arisen during the current process. As long as Phase II proceeds expeditiously, KEC is prepared to support the BES definition as proposed by the SDT. While KEC strongly supports the overall approach adopted by the SDT and much of the specific language incorporated into the second draft of the BES definition, we believe the second draft would benefit from further clarification or modification in a number of respects, most of which are detailed in our subsequent answers. Our support for the definition is not contingent upon these changes being adopted. Further, we believe a workable Exclusion Process is essential for a BES Definition that will meet the legal requirements of FPA Section 215, especially for systems operating in the Western Interconnection. As detailed in our previous comments, KEC believes a 200-kV threshold would be more appropriate for WECC than a 100-kV threshold. In addition, a 200-kV threshold for the West is backed by solid technical analysis conducted by the WECC Bulk Electric System Definition Task Force, and repeated claims that there is no technical analysis to support this view is therefore incorrect. That being said, we raise the issue here to emphasize the importance of the Exclusions for Local Networks and Radial Systems and the Exceptions process. These Exclusions and the Exceptions are essential for a definition that works in the Western Interconnection because the core definition will be over-inclusive in our region. As long as those Exclusions and the Exceptions Process are retained in a form substantially equivalent to those produced by the SDT at this juncture, KEC will support the SDT's proposal and will not further pursue its claims regarding the 200-kV threshold. Finally, we suggest that the SDT address the circumstance when an Element is covered by both an Inclusion and an Exclusion. We note that some of the inclusions already contain language addressing this question. For example, Inclusion 1 indicates that transformers falling within the specified parameters are part of the BES ". . . unless excluded under Exclusions E1 or E3." Where it is not already included, similar language should be included in the other Inclusions and/or Exclusions to explain whether the SDT intends the Inclusions or the Exclusions to predominate in situations where facilities might be covered by both. We suggest clarifying language in our responses to Questions 2 and 5.

Yes

KEC supports the SDT's changes to the first Inclusion because it is more clear and simple than the initial approach. That being said, we suggest that an additional sentence of clarification would help avoid future controversy about the meaning of Inclusion 1. As we understand it, the BES intends to include transformers only if both the primary and secondary terminals operate at 100 kV or above, which is why the definition uses the word "and" ("the primary and secondary terminals"). We support this approach since it would exclude transformers where the secondary terminals serve distribution loads, and which therefore function as distribution rather than transmission facilities. We believe the SDT's intent would be clarified by adding a sentence at the end of Inclusion 1 that reads: "Transformers with either primary or secondary terminals, or both, that operate at or below 100 kV are not part of the BES." This language will help ensure that there is no controversy over whether the SDT's use of the word "and" in the phrase "the primary and secondary terminals" was intentional. We also support the SDT's proposal to develop detailed guidance concerning the point of demarcation between BES and non-BES elements in the Phase II SAR. In this regard, we note that, while Inclusion 1 at least implicitly suggests that the dividing line between BES and non-BES Elements should be at the transformer where transmission-level voltages are stepped down to distribution-level voltages, we believe further clarification of this point of demarcation between the BES and non-BES Elements is necessary. Many different configurations of transformers and other equipment that may lie at the juncture between the BES and non-BES systems. If the point of demarcation is designated at the transformer without further elaboration, many entities that own equipment on the high side of a transformer will be swept into the BES, and thereby exposed to inappropriately stringent regulations and undue costs. For example, distribution-only utilities commonly own the switches, bus and transformer protection devices on the high side of transformers where they take delivery from their transmission provider. Ownership of these protective devices and high-voltage bus on the high side of

the transformer should not cause these entities to be classified as BES owners. As the Phase II process moves forward, we commend to the SDT the extensive work performed on the point of demarcation question by the WECC BESDTF. We also support the incorporation of language (". . . unless excluded under Exclusions E1 or E3") making it clear that transformers that are operated as an integral part of a Radial System or Local Network should not be considered BES facilities, regardless of their operating voltage. Further clarification might be achieved by using the phrase ". . . unless the transformer is operated as part of a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2."

Yes

KEC supports the changes made in Inclusion 2 and believe that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process to examine the technical justification for these thresholds and to establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less due process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little due process. KEC also believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes to include generation in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100 kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria. The "materiality

threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe it is highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Hence, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100 kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100 kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100 kV or above." Finally, as discussed further in our answer to Questions 5 and 6, KEC believes more clarity may be achieved by collapsing Inclusion 5, addressing Reactive Power resources, and Inclusion 4, which addresses dispersed renewable resources, into a single Inclusion that addresses "power producing resources" (the language used in current Inclusion 4).

Yes

KEC supports the changes made in Inclusion 3 and believe that the definition in its current form adds clarity. In particular, we support the SDT's decision to collapse Inclusions 2 and 3 from the previous draft definition into a single Inclusion that addresses the treatment of generation for purposes of the BES definition. We also support the SDT's proposal for a Phase II of the BES Definition process to examine the technical justification for these thresholds and to establish new thresholds based on a careful technical analysis. It is our understanding that the generator threshold issue will be vetted through the complete standards development process. We agree with this approach because if the generator threshold is treated as merely an element of NERC's Rules of Procedure, it can be changed with considerably less due process and industry input than the Standards Development Process. Compare NERC Rules of Procedure § 1400 (providing for changes to Rules of Procedure upon approval

of the NERC board and FERC) with NERC Standards Process Manual (Sept. 3, 2010) (providing for, e.g., posting of SDT proposals for comment, successive balloting, and super-majority approval requirements). See also Order No. 743-A, 134 FERC ¶ 61,210 at P 4 (2011) ("Order No. 743 directed the ERO to revise the definition of 'bulk electric system' through the NERC Standards Development Process" (emph. added)). Addressing all aspects of Phase II through the Standards Development Process will improve the content of the definition by bringing to bear industry expertise on all aspects of the definition and will ensure that, once firm guidelines are established, they can be relied upon by both industry and regulators without threat that they will be changed with little notice and little due process. KEC also believes further clarification of the proposed language would be appropriate. The SDT proposes continued reliance upon the thresholds that are used in the NERC Statement of Compliance Registry Criteria for registration of Generation Owners and Generation Operators, which is currently 20 MVA for an individual generation unit and 75 MVA for multiple units on a single site. Conceptually, we are concerned about this approach because, as we understand it, the purpose of the Compliance Registry is to sweep in all generators that might be material to the reliable operation of the BES, and not to definitively determine whether a given generator is, in fact, material to the reliable operation of the BES. As the SCRC itself states, the SCRC is intended only to identify "candidates for registration." SCRC at p.3, § 1 (emph. added). Accordingly, we believe that the generator threshold determined in Phase II should be incorporated directly into the BES Definition rather than being incorporated by reference from the SCRC. We also believe that the specific language proposed by the SDT could be further clarified. The SDT proposes to include generation in the BES if the "Generation resource(s)" has a "nameplate rating per the ERO Statement of Compliance Registry." We understand this language is intended to be a placeholder for the results of the technical analysis that would occur in Phase II but we believe simply stating that the threshold will be "per the ERO Statement of Compliance Registry" is ambiguous. Further, for the reasons noted above, we believe the threshold should be part of the BES Definition, and should not simply be a cross-reference to the SCRC (and, given the different purposes of the BES Definition and the SCRC, it is not clear that the same threshold should be used in both). We therefore propose that Inclusion 2 be rewritten to state: "Qualifying Individual Generation Resources or Qualifying Aggregate Resources connected at a voltage of 100 kV or above." Two definitions would then be added to the note at the end of the definition to read as follows: For purposes of this BES Definition, Qualifying Individual Generation Resources means an individual generating unit that meets the materiality threshold to be included in this definition or, in the absence of such a materiality threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of such a resource as a Generation Owner under the ERO Statement of Compliance Registry Criteria. For purposes of this BES Definition, Qualifying Aggregate Generation Resources means any facility consisting of one or more generating units that are connected at a common bus that meets the materiality threshold to be included in this definition, or, in the absence of such a threshold, that meets the gross nameplate capacity voltage threshold requiring registration of the owner of multiple-unit generator as a Generation Owner under the ERO Statement of Compliance Registry Criteria. The "materiality threshold" is intended to refer to the generator threshold developed in Phase II. We suggest using definitions in this fashion for several reasons. First, we believe the language we suggest more clearly states the intention of the SDT, which we understand is to classify generation units as part of the BES if they are necessary for operation of the BES, but to exclude smaller generating units because they are not material to the operation of the interconnected transmission grid. Second, we believe use of the defined terms better reflects the intention of the SDT to reserve the specific question about generator thresholds to the technical analysis that will occur in Phase II without having to revise the BES Definition at the end of that process. That is, the definitions are designed to allow the SDT to include revised thresholds in the definition at the conclusion of the Phase II process based upon the technical analysis planned for Phase II, and the revised thresholds will be automatically incorporated into the BES Definition if the language we suggest is used. The thresholds used in the SCRC would only be a fall-back, to be used only until Phase II is completed. Third, the definitions can be incorporated into other parts of the BES Definition, which will add consistency and clarity. As noted in our answers to several of the questions below, the specific 75 MVA threshold is retained in several of the Exclusions and Inclusions, and we believe the industry would be better served if the revised thresholds arrived at after technical analysis in Phase II are automatically incorporated into all relevant provisions of the BES Definition. There is no reason for the SDT to continue to rely on the 75 MVA threshold once the analysis planned for Phase II on the threshold issue is completed. Fourth, the phrase "or that meets the materiality threshold to be included in this definition" is intended to

preserve the SDT's flexibility to make a determination that generators below a specific threshold are not "necessary to" maintain the reliability of the interconnected transmission system, and to incorporate that finding as part of the definition itself, even if a different threshold is used in the SCRC to identify potential candidates for registration. Accordingly, our proposed language makes clear that a specific threshold in the definition controls over any threshold that might be included in the SCRC. For the reasons stated above, we believe it is highly desirable to include any material threshold in the BES Definition itself rather than relegating the threshold to the SCRC, which is merely a procedural rule rather than a full-fledged Reliability Standard. Hence, we agree with the SDT's decision to examine the question of where the line between BES and non-BES Elements should be drawn more closely in Phase II under the rubric of "contiguous vs. non-contiguous BES," and commend the work of the Project 2010-07 Standards Drafting Team and the GO-TO Team as a good starting point for the SDT's analysis on this issue. We understand Inclusion 2 would classify generators exceeding specific thresholds as part of the BES, but would not necessarily require facilities interconnecting such generators to be part of the BES. As discussed more fully in our answer to Question 9, based on extensive technical analysis that has already been performed by the NERC Project 2010-07 Standards Drafting Team and its predecessor, the NERC "GO-TO Team," regulating as part of the BES a dedicated interconnection facility connecting a BES generator to the interconnected bulk transmission grid will result in an unnecessary regulatory burden that produces considerable expense for the owner of the interconnection facility with little or no improvement in bulk system reliability. We also believe the clauses at the end of Inclusion 2 are somewhat confusing and that greater clarity would be achieved by changing ". . . including the generator terminals through the high-side of the step-up transformer(s) connected at a voltage of 100 kV or above" so that the Inclusion covers transformers with terminals "connected at a voltage of 100 kV or above, including the generator terminal(s) on the high side of the step-up transformer(s) if operated at a voltage of 100 kV or above." Finally, as discussed further in our answer to Questions 5 and 6, KEC believes more clarity may be achieved by collapsing Inclusion 5, addressing Reactive Power resources, and Inclusion 4, which addresses dispersed renewable resources, into a single Inclusion that addresses "power producing resources" (the language used in current Inclusion 4).

Yes

KEC supports the revised language generally, but believes additional changes would make the language clearer. Specifically, we believe Inclusion 4 should not incorporate a hard 75 MVA generation threshold (i.e, "resources with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)"). Instead, we urge the SDT to replace this language with the defined term "Qualifying Aggregate Generation Resources," which is discussed in more detail in our response to Question 3. This language, or some equivalent, will preserve the SDT's ability to revise the 75 MVA threshold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. More generally, we are not certain what is accomplished by Inclusion 4 that is not already accomplished by Inclusion 2, which also addresses whether generation should be defined as BES. The SDT's stated concern is with variable generation units such as wind and solar plants. It is not clear to us why this concern is not fully addressed in Inclusion 2, which addresses multiple generation units connected at a common bus, the configuration of most variable generation plants with multiple units. We are also concerned that the language, as proposed, could have unintended consequences and improperly classify local distribution systems as BES in certain circumstances. This is because multiple distributed generation units could render a local distribution system a "collector system" and the entire system the equivalent of an aggregated generation unit, causing the local distribution system to be improperly denied status as a LN. If many different distributed generation units are connected to a local distribution system, it is very unlikely that more than a few of those units would fail simultaneously, and it is therefore unlikely that multiple generation units would produce a measureable impact on the interconnected bulk transmission system, especially if the units individually do not otherwise exceed the materiality threshold to be established by the SDT in Phase II. Further, we are concerned that, if small distributed generation units become the industry norm, Inclusion 4 could unintentionally sweep in local distribution systems, especially where local policies favor the growth of small solar or other renewable generation systems for public policy reasons. Finally, we suggest that the SDT add the phrase ". . . unless the dispersed power producing resources operate within a Radial System meeting the requirements of Exclusion E1 or a Local Network meeting the requirements of Exclusion E2." This language, which parallels the language included at the end of Inclusion I1, would make clear that dispersed small-scale generators scattered throughout a Radial System or Local Network serving retail load would not convert the

Radial System or Local Network into a BES system, even if the aggregate capacity of those small generators exceeds the relevant threshold.

No

KEC has several concerns about the new language in Inclusion 5. First, because Reactive Power devices produce power, they are “power producing resources” and we therefore believe Inclusion 5 is duplicative of Inclusion 4, which addresses “power producing devices.” Second, there is no capacity threshold specified in Inclusion 5 for Reactive Power devices that would be considered part of the BES. This is inconsistent with the approach taken in the balance of the definition, where thresholds are specified for generators and other types of power producing devices. Finally, KEC believes the appropriate threshold for inclusion or exclusion of Reactive Power devices from the BES should be subject to the same technical analysis that will cover generators in the Phase II process.

Yes

KEC continues to support the radial system exclusion, which is necessary as a legal matter, because, for example, FERC in Orders No. 743 and 743-A has required that the existing radial exemption in the NERC Statement of Compliance Registry Criteria be maintained. As a practical matter, radial systems are used for service to retail loads, usually in remote or rural areas, and not for the transmission of bulk power. Hence, operation of the radials has little or nothing to do with the reliable operation of the interconnected bulk transmission network. We also support the inclusion of the note discussing normally open switches because this language provides needed clarity for a common radial system configuration. We also agree with the substantive thrust of this language, which is that a radial system should not be considered part of the BES if it is interconnected at a single point, even if there is an alternative point of delivery that is normally open. While we support the Exclusion for Radial Systems, we believe several clarifications and refinements are necessary. (1) The term “transmission Elements” in the initial paragraph should be changed to “Elements.” Radial systems are not transmission systems and including the word “transmission” in the Radial System exclusion is therefore unnecessary and confusing. (2) Subparagraph (b) of Exclusion 1 refers to “generation resources . . . with aggregate capacity greater than 75 MVA (gross aggregate nameplate rating)”). We urge the SDT to replace this language with the defined term “Qualifying Aggregate Generation Resources,” discussed in more detail in our response to Question 3. This language, or some equivalent, will preserve the SDT’s ability to revise the 75 MVA threshhold in Phase II, with the result of Phase II included in the BES Definition by operation rather than requiring further revision of the Definition. (3) Subparagraph (b) also seems to assume that if a Radial System contains a generator exceeding the 75 MVA threshhold, the Radial System itself must be included in the BES because it links the generator to the interconnected bulk transmission system. As discussed more fully in our response to Question 9, below, NERC’s Project 2010-17 Standards Drafting Team and GO-TO Task Force have both concluded that this assumption is unwarranted. (4) The “Note” as drafted by the SDT indicates that “a normally open switching device between radial systems” will not serve to disqualify the Radial from exclusion under Exclusion 1. As noted above, KEC strongly supports the note conceptually. However, we believe this language should be included in a separate subparagraph (d), rather than a note, because treatment as a “note” suggests it is less important than other portions of the Exclusion. We also suggest the language be changed to read: (d) Normally-open switching devices between radial elements as depicted and identified on system one-line diagrams does not affect this exclusion. This will make clear that a radial with more than one normally-open switch connecting it to another radial is still a radial. From the perspective of the BES Definition, the key question is whether switches operating between Radials are normally open, not whether there is more than one normally-open switch.

Yes

KEC supports the revised language. The language provides clarity regarding the BES status of customer-owned cogeneration facilities. However, KEC urges the SDT to remove the reference to the 75 MVA threshhold and replace it with the defined term “Qualifying Aggregate Generation Resources” or some equivalent language for the reasons stated in our responses to Questions 3, 5, and 7. In addition, we are concerned that Exclusion 2 will place local distribution utilities in a difficult position because, under Exclusion 1 or Exclusion 3 as drafted, they could lose their status as a Radial System or a Local Network through the actions of a customer constructing behind-the-meter generation, With respect to Radial Systems, the appearance of behind-the-meter generators could cause the Radial System to exceed the thresholds specified in subparagraphs (b) and (c) of Exclusion 1 through no fault of the Radial System owner. Similarly, a Local Network could lose its status because behind-the-

meter generation could be of sufficient size that power moves into the interconnected grid in certain hours or under certain contingencies, rather than moving purely onto the Local Network, as required in subparagraph (b) of Exclusion 3. The Exclusions for Radial Systems and Local Networks should be made consistent with the Exclusion for behind-the-meter generation. There is no technical reason to believe the power flowing from a behind-the-meter customer-owned generator will have less impact on the bulk system than an equivalent-sized generator owned by a utility operating a Radial System or LN.

Yes

KEC strongly supports the categorical exclusion of Local Networks ("LNs") from the BES. We believe the exclusion is necessary to ensure that the BES definition complies with the statutory requirement, discussed in our response to Question 1, to exclude all facilities used in the local distribution of electric power. LNs are, of course, probably the most common form of local distribution facility. Further, the conversion of radial systems to local distribution networks should be encouraged because networked systems generally reduce losses, increase system efficiency, and increase the level of service to retail customers. If the BES definition were to provide an exclusion for radials without providing a similar exclusion for LNs, however, it would discourage networking local distribution systems because of the significantly increased regulatory burdens faced by the local distribution utility if it elected to network its radial facilities. By placing radial systems and LNs on the same regulatory footing, the proposed definition will ensure that decisions about whether to network radial systems are made on the basis of costs and benefits to the retail customers served by those radials, and not on the basis of disparate regulatory treatment. Consumers will ultimately benefit from the path chosen by the SDT. KEC also supports specific refinements made to the LN exclusion by the SDT in the current draft of the BES definition. In particular, KEC supports the clarification of the purposes of a LN. The current draft states that LNs connect at multiple points to "improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system." KEC supports this change in language because it reflects the fundamental purposes of a LN and emphasizes one of the key distinctions between LNs and bulk transmission facilities, namely, that LNs are designed primarily to serve local retail load while bulk transmission facilities are designed primarily to move bulk power from a bulk source (generally either the point of interconnection of a wholesale generator or a the point of interconnection with another bulk transmission system) to one or more wholesale purchasers. KEC believes further improvement of the language could be achieved with additional modifications and clarifications. With respect to the core language of Exclusion 3, we believe the language making a "group of contiguous transmission Elements operated at or above 100 kV" the starting point for identifying a LN would be improved by deleting the term "transmission" from this phrase. This is so because LNs are not used for transmission and the use of the term "transmission Elements" is therefore both confusing and unnecessary. There would be no room for argument about what the SDT intended by including the word "transmission" if the word is deleted and the Exclusion applies to any "group of Elements operated at 100 kV or above" that meets the remaining requirement of the Exclusion. Further, any definitional value that is added by using the term "transmission Elements" is accomplished by using that term in the core definition, and there is no reason to carry the term through in the Exclusions. KEC also believes that subparagraphs (a) and (b) are redundant in the sense that whatever protection is offered by the generation limit in subparagraph (a) is duplicated by the limit in subparagraph (b) requiring no flow out of the LN. We believe the SDT can eliminate subparagraph (a) of Exclusion 3 and simply rely on subparagraph (b) because if power only flows into the LN even if it interconnects more than 75 MVA of generation, the interconnected generation interconnected will have no significant interaction with the interconnected bulk transmission system. It will only interact with the LN. And, with the advent of distributed generation, it is easy to foresee a situation in which a large number of very small distributed generators are interconnected into a LDN, so that the aggregate capacity of these generators exceeds 75 MVA. However, because the generators are small and dispersed and, under the criterion in subparagraph (b), would be wholly absorbed within the LN rather than transmitting power onto the interconnected grid, those generators would not have a material impact on the grid. We also suggest that subparagraph (b) of Exclusion 3 could be more clearly drafted. Subparagraph (b), as part of the requirement that power flow into a LN rather than out of it, includes this description: "The LN does not transfer energy originating outside the LN for delivery through the LN." We understand this language is intended to distinguish a LN from a link in the transmission system – power on a transmission link passes through the transmission link to a load located elsewhere, while power in a LN enters the LN and is consumed by retail load within the LN. While we agree with the concept

proposed by the SDT, we believe the language would be clearer if it read: "The LN does not transfer energy originating outside the LN for delivery through the LN to loads located outside the LN." We believe the italicized language is necessary to distinguish between a transmission system, where power that originates outside a system is delivered through the system and passes through the system to a sink located somewhere outside the system, from a LN, in which power originating outside the LN passes through the LN and is delivered to retail load within the LN. To put it another way, the italicized language helps distinguish a transmission system from an LN, in which the LN "transfers energy originating outside the LN for delivery through the LN to loads located within the LN." We also believe the language of subparagraph (a) of Exclusion 3 could be improved. Subparagraph (d) would make LNs part of the BES if they interconnect "non-retail generation greater than 75 MVA (gross nameplate rating)." For the reasons stated in our responses to Questions 3, 5 and 7, we urge the SDT to replace the reference to a hard 75 MVA threshold with the defined term "Qualifying Aggregate Generation Resources" or some equivalent. We are also uncertain what is meant by the use of the term "non-retail generation" in subparagraph (a). From context, we believe the SDT considers "non-retail generation" to mean generation that is used by retail customers located within a LN rather than being exported and sold on wholesale markets outside the LN. We therefore suggest that the SDT replace the phrase "non-retail generation" with the phrase "generation sold in wholesale markets and transmitted outside the LN." Similarly, we are unsure what is meant by the phrase "the LN and its underlying Elements." We believe the phrase "and its underlying Elements" could simply be deleted from the definition without loss of meaning. In the alternative, the SDT might consider using the phrase "the LN, including all Elements located on the distribution side of any Automatic Fault Interrupting Devices (or other points of demarcation) separating the LN from the bulk interstate transmission system." We believe this phrase more accurately reflects the SDT's intent, which appears to be that generation exceeding 75 MVA in aggregate capacity interconnected anywhere within the LN disqualifies that LN from being excluded from the BES under Exclusion 3. Finally, KEC believes that both subparagraphs (a) and (b) of Exclusion 3 could be safely eliminated as long as subparagraph (c) is retained. Subparagraph (c) makes a LN part of the BES if it is classified as a Flow Gate or Transfer Path. Flow Gates and Transfer Paths are, by definition, the key facilities that allow reliable transmission of bulk electric power on the interconnected grid. If a LN has not been identified as either a Flow Gate or a Transfer Path, it is unlikely the LN is necessary for the reliable transmission of electricity on the interconnected bulk system. Apart from these specific improvements that we believe could be achieved by modifying the language of Exclusion 3, we believe the SDT may need to re-examine certain assumptions that appear to underlie the current draft. Specifically, subparagraph (a) suggests that if BES generation is embedded within a LN, the LN itself must also be BES. But two NERC bodies have already addressed similar questions and concluded there is no technical basis for such concerns. NERC's Standards Drafting Team for Project 2010-07 and its predecessor, the "GO-TO Task Force" were formed to address how the dedicated interconnection facilities linking a BES generator to high-voltage transmission facilities should be treated under the NERC standards. The GO-TO Team concluded that by complying with a handful of reliability standards, primarily related to vegetation management, reliable operation of the bulk interconnected system could be protected without unduly burdening the owners of such interconnection systems. Therefore, there is no reason, according to the GO-TO Team, that dedicated high-voltage interconnection facilities must be treated as "Transmission" and classified as part of the BES in order to make reliability standards effective. See Final Report from the NERC Ad Hoc Group for Generator Requirements at the Transmission Interface (Nov. 16, 2009) (paper written by the GO-TO Task Force). Similarly, the Project 2010-07 Team observed that interconnection facilities "are most often not part of the integrated bulk power system, and as such should not be subject to the same level of standards applicable to Transmission Owners and Transmission Operators who own and operate transmission Facilities and Elements that are part of the integrated bulk power system." White Paper Proposal for Information Comment, NERC Project 2010-07: Generator Requirements at the Transmission Interface, at 3 (March 2011). Requiring Generation Owners and Operators to comply with the same standards as BES Transmission Owners and Operators "would do little, if anything, to improve the reliability of the Bulk Electric System," especially "when compared to the operation of the equipment that actually produces electricity – the generation equipment itself." Id. We believe that interconnection of BES generators within a LN is analogous and that, based on the findings of the Project 2010-07 and GO-TO Teams, automatically classifying a LN as "BES" simply because a large generator is embedded in the LN will result in substantial overregulation and unnecessary expense with little gain for bulk system reliability. If anything, generation interconnected through a LN is less

likely to produce material impacts on the interconnected bulk transmission system than the equivalent generator interconnected through a single dedicated line because an LN is interconnected to the bulk system at several points, so that if one interconnection goes down, power can still flow from the BES generator to the bulk system on other interconnection points. Where a dedicated interconnection facility is involved, by contrast, if the interconnection line fails, the generator is unavailable to the interconnected bulk system. Similarly, we suggest that the SDT re-examine the assumptions underlying subparagraph (b), which seems to suggest that a local distribution system cannot be classified as a Local Network if power flows out of that system at any time, even if the amount is de minimis, the outward flow is only for a few hours a year, or the outward flow occurs only in an extreme contingency. Accordingly, we suggest that the initial clause of subparagraph (b) be revised to read: “Except in unusual circumstances, power flows only into the LN.”
Yes
KEC supports the revised language because retail reactive devices are used to address local customer or retail voltage issues, rather than voltage issues on the interconnected bulk grid, and such local devices should therefore be excluded from the BES definition.
No
KEC extends its thanks to the SDT and to the many industry entities that have actively participating in the Standards Development Process. KEC strongly supports the current draft and believes, with certain refinements discussed in our comments, that the definition will serve the industry and reliability regulators well for many years to come. In addition, as noted earlier, KEC is encouraged that the 20/75 MVA generation thresholds referred to in the NERC Statement of Compliance Registry Criteria, which have been relied upon by the SDT largely as a matter of necessity, will be reviewed and a technical assessment will be performed to identify the appropriate generation unit and plant size threshold to ensure a reliable North America. Finally, we understand that the Rules of Procedure Team will continue to move forward with developing an Exceptions Process that will complement the BES Definition and ensure that, to the extent the BES Definition is over-inclusive, facilities that should not be classified as BES will be excluded from the BES. Because the Exceptions Process is integral to a workable BES Definition, we support the current process for moving forward with the Exceptions Process and the BES Definition on parallel paths. We note that KEC specifically supports the changes made by the SDT in the “Effective Date” provision of the BES Definition, which shortens the effective date of the new definition to the beginning of the first calendar quarter after regulatory approval (as opposed to the first calendar quarter twenty-four months after regulatory approval), with a 24-month transition period. KEC supports this conclusion because it will allow entities seeking deregistration under the terms of the new BES definition to obtain the benefits of the new definition without an unreasonable wait, while allowing any entities that may be newly-classified as BES owners or operators sufficient time to come into compliance with newly-applicable Reliability Standards. KEC also supports the 24-month transition period for the reasons laid out by the SDT.
Individual
Andy Pusztai
ATC LLC
Yes
Yes
Yes
Yes
Yes
No
ATC agrees with the inclusion provided the last clause is removed, as noted below. The BES definition is intended to establish a bright line BES definition. The clause “dedicated transformer” is undefined and unclear. Inclusion I5 –Static or dynamic devices dedicated to supplying or absorbing Reactive

Power that are connected at 100 kV or higher (deletion of remainder of clause).
Yes
Unless there is a specific reason to the contrary, ATC suggests that Exclusion E1b include the qualification of “aggregate capacity of non-retail generation less than or equal to 75 MVA” to be consistent with the wording in E1c.
Yes
No
ATC agrees in general with the exclusions for E3 pending the following changes: Power flows only into the LN: The LN does not transfer energy originating outside the LN for delivery through the LN under normal operating conditions (n-0 contingency); and ATC suggests considering a different approach for the power flow criteria in Exclusion E3b: Inclusion E3b - No Firm Power Transfers are scheduled to flow out of, or through, the LN in the operating horizon [for BES designations applicable to the operating horizon] and no Firm Power Transfers are reserved to flow out of, or through, the LN in the planning horizon [for BES designations applicable to the planning horizon).
Yes
No
Group
Sandra Shaffer
PacifiCorp
Yes
PacifiCorp believes the SDT continues to make substantial progress towards a clear and workable definition of the Bulk Electric System (“BES”) that markedly improves both the existing definition and the SDT’s previous proposal. PacifiCorp strongly supports the new definition, conditioned on: (1) a workable Exceptions process being developed in conjunction with the BES definition; and, (2) the SDT moving forward expeditiously on Phase II of the standards development process in accordance with the SAR recently put forward by the SDT.
Yes
PacifiCorp suggests a clarification to I1 to provide as follows: “Transformers with either primary or secondary terminals, or both, that operate at or below 100 kV are not part of the BES.”
No
Requiring owners of single generators (20 MVA – 75 MVA) to meet reliability standards that owners of distributed power producing resources (See I4) do not have to meet is discriminatory. The limit for a single unit should be set to 75 MVA until such time as a technical review can determine the appropriate levels for all generation resources. However, even with this concern, PacifiCorp supports the entire BES definition in its current form based on the timeframe under which the SDT is operating and with an emphasis based on a phase II SAR to address PacifiCorp’s objections regarding generation levels.
Yes
PacifiCorp supports the removal of reference to Cranking Paths in I3. There is no reason to classify as BES the facilities interconnecting a BES generator to the interconnected transmission system.
No
Setting a dispersed power producing resource limit to 75 MVA at a common point discriminates against single generator owners who own generators between 20 MVA and 75 MVA (inclusion I1), typically connected at a common point and requires such owners to be subject to additional standards that dispersed power producing owners are not required. However, even with this concern, PacifiCorp supports the entire BES definition in its current form based on the timeframe under which the SDT is operating and with an emphasis based on a phase II SAR to address PacifiCorp’s objections regarding generation levels. Under the attached scenario, please identify which elements would be considered BES: This response included a drawing. This format will not allow the submission of the drawing. The drawing will be sent separately in an email. Reference "Proj 2010-17 PAC Drawing".

No

PacifiCorp recommends the addition of the phrase "…unless excluded under E1 or E3." Otherwise, PacifiCorp believes that I5 is currently acceptable. However, phase II should identify limits and technically justify the appropriate limit(s).

Yes

: The note in E1 as written is ambiguous and requires clarification. PacifiCorp assumes the note means that two radial systems separated by a normally open switching device allows for the exclusion of both radial systems. PacifiCorp recommends that the SDT revise the note to serve as a paragraph clarifying E1 that, "Radial systems separated by normally open switching device(s) as depicted on prints or one-line diagrams for example, and operated in the normally open position, except during abnormal operating conditions, qualifies both radial systems under this exclusion."

Yes

Yes

PacifiCorp strongly supports the categorical exclusion of Local Networks ("LNs") from the BES. PacifiCorp believes the exclusion is necessary to ensure that the BES definition complies with FERC's statutory jurisdictional requirements. PacifiCorp recommends the following modifications: • Change "contiguous transmission Elements" to "contiguous Elements". • Modify item b to state, "Power flows only into the LN during normal operating conditions: The LN does not transfer energy originating outside the LN for delivery to loads located outside the LN…" • Add an item (may be included in item b) to provide as follows: "The LN is not critical (or is not relied upon) to maintain the reliability of the interconnected system during abnormal operating conditions."

Yes

No

It is absolutely imperative that phase II continue as proposed by the STD. If phase II was not proposed PacifiCorp would vote no on this proposal.

Group

Heather Hunt

NESCOE

No

The New England States Committee on Electricity ("NESCOE") appreciates the opportunity to provide comments on the revised BES definition. NESCOE is New England's Regional State Committee and represents the collective views of the six New England states. Please consider this submission to reflect the views of the States of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. Some of these states may submit separate comments in addition to this joint filing. NESCOE does not believe that the proposed changes address our fundamental concerns. As NESCOE pointed out in its comments on the previous draft, the definition's reliance on a 100 kV "bright line" threshold may impose substantial costs on New England ratepayers without achieving meaningful reliability benefits. NERC and the drafting team have not provided any technical justification for imposing the 100 kV test, despite its potential for over-inclusiveness and significant costs. NESCOE believes that the Federal Energy Regulatory Commission ("FERC" or "the Commission") recognizes the need to avoid this result. As the Commission pointed out in Order 743A, Order 743 does not mandate the application of a 100 kV threshold, and NERC is free to propose alternatives. Unless and until NERC provides a technical justification for its approach, the Standard should use the 100 kV threshold concept in a way that is consistent with the Commission's guidance. Specifically, the Standard should make clear that the 100 kV threshold is an "initial line of demarcation," and not the end of the analysis. According to Order 743A, the two criteria that bound the BES definition are (1) the statutory exclusion of facilities used in local distribution, and (2) the requirement that the facilities included be "necessary for reliable operation" of the interconnected transmission system. A definition that recognizes these limits, coupled with an efficient and transparent exceptions process, would meet FERC's expectations. The proposed definition does not meet this standard. For these reasons, absent a technical justification for imposing a 100 kV threshold, NESCOE suggests the following revised core definition: "All Transmission Elements operated at 100 kV or higher and Real Power and Reactive Power resources connected at 100 kV or higher that are necessary for the reliable operation of the

interconnected transmission network, including but not limited to the facilities listed below as Inclusions, and excluding (1) facilities that are used in the local distribution of electric energy, and (2) the facilities and systems listed below as Exclusions. Other Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process." Where FERC had concerns that the existing definitions for the bulk power system were under-inclusive, the proposed Standard risks erring in the opposite direction. Because the definition of the BES is critical to NERC's role as ERO and will have a significant impact on ratepayers, NESCOE believes the drafting team should track FERC's guidelines as closely as possible, or provide a specific technical justification for relying on the 100 kV bright line threshold.
No
NESCOE supports the revised Inclusion I1 language that treats Exclusions E1 and E3 as alternative exclusions, either of which may qualify as an exclusion. However, specificity is needed regarding what equipment is included in I1 (e.g., autotransformers, PARs, primary, secondary, tertiary windings).
No
Failing to establish a known MVA rating at this stage is problematic. The BES definition cannot be considered in a vacuum, and adjusting or establishing thresholds such as MVA ratings will create regulatory uncertainty and may result in additional costs and unnecessary system upgrades. Additionally, Inclusion I2 should remove the reference to the Statement of Compliance Registry Criteria. The definition should be the governing document regarding generation that is included in the BES.
No
While NESCOE appreciates that cranking paths were excluded in response to industry comments, as we stated in comments to the prior posting of the BES definition, blackstart units should be excluded from the BES. Such units are appropriately covered under regional restoration procedures and applicable NERC standards (see for example, Emergency Operating Procedure EOP-005-2). However, should blackstart units be included in subsequent postings of the definition, we suggest that the language be revised to state that only those units "material to" the BES are included.
No
NESCOE continues to disagree with this proposed inclusion. NESCOE is concerned with the potential adverse impact this may have on the development of renewable generation resources. In addition, NESCOE suggests that the aggregate 75 MVA of connected generation is too low and is not adequately supported by technical analysis. The threshold value should be related to the largest contingency the applicable control area is designed to operate to. A level of 300 MVA would be appropriate. Finally, the inclusion needs to be clarified in order that entities have clear guidance on what is meant by "common point of interconnection."
No
NESCOE believes that inclusion of all devices that supply reactive power to the BES is unnecessary and will result in transferring unjustified costs to the ratepayer. Static devices (fixed capacitors) should remain excluded from the BES as they are dispatched by operations personnel, and if one fixed capacitor bank fails, the operator can replace its impact by switching in another fixed bank. This represents routine operation of the system. On the other hand, dynamic devices may be important to maintaining voltage stability of the system. These installations typically are rated to supply or absorb 75 MVA or more to or from the BES. Therefore, NESCOE suggests that dynamic reactive power devices rated at 75 MVA or more be included in the BES. Further, revised inclusion I5 is a new inclusion that lacks definition (and appears to be redundant with the general BES definition). NERC should provide additional technical justification for the additional language under Inclusion I5.
Yes
NESCOE suggests that the aggregate 75 MVA of connected generation is too low and would benefit from additional technical justification. The threshold value should be related to the largest contingency to which the applicable control area is designed to operate. A level of 300 MVA would be appropriate. This 300 MVA limit represents 25% of the 1200 MVA loss of source that is typically assumed for operation of the Northeast portion of the Eastern Interconnection. Depending on system conditions, this number may be as high as 1500 MVA. Therefore, the suggested value of 300 MVA has a technical basis and falls well within typical loss of source expectations for the Northeast.
Yes

While NESCOE generally supports Exclusion E2, no information has been provided by NERC demonstrating that the 75 MVA rating is based on any sound technical analysis.
Yes
NESCOE generally supports this exclusion but believes it is too narrow. As noted in the response to question 7, Exclusion E3 should allow a higher level of aggregate generation MVA on a Local Network (at least 300 MVA). In addition, NESCOE believes that local networks should not necessarily be ineligible for Exclusion E3 simply because an amount of power may transfer out of the network at times. NERC's draft technical network exclusions document should be amended such that local networks would be permitted to qualify for network exclusions under E3 if power flowing out of the network is minimal and would not likely adversely impact the BES. For example, transfers of less than or equal to 100 MVA should not have any adverse impact on the BES. The draft technical network exclusions document should be amended to state that transfers of 100 MVA MVA into the BES from the local distribution network are acceptable. The 100 MVA limit suggested here represents 25% of the rated value of a typical 345/115 substation (typically on the order of 400 MVA). Rarely does more than a fraction of the rated MVA flow from the low voltage side to the high voltage side. An allowance of 100 MVA represents a flow level will have no significant impact to the interconnected bulk power network.
Yes
While we are generally supportive of this exclusion, the term "retail" needs to be clarified (i.e., are retail customers of all sizes intended to be excluded?).
Yes
NESCOE offers the following additional comments: 1) Phased Approach. While well-intentioned, separating the BES definition project into two separate phases is problematic from both a procedural and substantive perspective. While we recognize that the filing due date is rapidly approaching, the BES definition cannot be considered in a vacuum, divorced from the concerns raised by a number of parties in response to past postings of the BES definition. The issues NERC has identified for consideration during the proposed "Phase 2" are inseparable from the development of the BES definition and should be squarely addressed before a definition is adopted. In particular, the development of criteria for determining what facilities are "necessary for the reliable operation" of the interconnected system cannot be put off for a second phase. Contrary to FERC's direction, NERC's proposal will force ratepayers to incur costs related to compliance with mandates that may or may not be revised through the second phase of the project. The importance of considering and resolving such concerns before adopting a definition is heightened by the proposed two-year implementation requirement. This short implementation period almost guarantees that entities will commit resources shortly after adoption of the definition to ensure compliance within the mandated period. In other words, ratepayers will bear costs related to compliance irrespective of any change resulting from the Phase 2 process or the exception process. Expediency, while understandable given the filing deadline, must be balanced against the risk that a multi-phased approach could lead to significant consumer costs without attendant meaningful reliability benefits. 2) Cost-Benefit Analysis. A cost impact analysis should be performed as part of developing any reliability standard. However, the development of the BES definition has failed to consider the cost impacts of the definition (and its inclusions and exclusions) and weigh these impacts against identified benefits that the definition would achieve. NESCOE stated in its May 21, 2011 comments on the last posting of the BES definition that "any new costs a revised definition imposes – which fall ultimately on consumers – should provide meaningful reliability benefits." A cost-benefit analysis should be integral to the development of a BES definition and, indeed, any reliability standard. This analysis should include a probabilistic risk assessment examining the likelihood of an event and the costs and risks resulting from such event, which should be weighed against the costs of complying with the proposed reliability measures. 3) Technical Justification. In addition to performing a cost-benefit analysis, a technical basis must be provided to justify a proposed reliability standard. However, as we state above, the proposed BES definition does not provide a technical justification for the 100 kV threshold. Nor does it provide a technical justification for the threshold for generation resources or other elements of the definition. As stated above, while well-intentioned and understandable, deferring this technical justification to a later and separate phase of the project is a flawed and potentially costly approach. Providing a technical justification for a reliability standard is a core function of standards development and should be addressed at the forefront of the process rather than relegated to a separate phase largely undertaken after a standard is filed.

Individual
Bo Jones
Westar Energy
No
The last sentence of the core part of the definition states that no distribution facilities will be included, but we feel that some of these facilities could be included due to also being blackstart resources. We agree with the idea of removing distribution facilities, but would like to see some clarification or a qualifier with regards to blackstart resources.
Yes
Yes
Yes
No
We believe that the removal of the wording “single site” in I2 would eliminate the need to include dispersed power producing resources in I4. We feel that I4 should be removed to reduce redundancy in the definition, unless there is some other reason to include it. Also, we understand that 75 MVA is retained in I4 because there is no direct link to the ERO Statement of Compliance Registry Criteria, but we have concerns that this number could change in phase two of the project, creating unnecessary work in the future.
No
We understand that I5 is being used to capture those devices other than generation resources, but the language used leads us to believe that it could include all generators that supply or absorb reactive power. We also believe the language should be changed to be consistent with I1. We suggest that I5 be changed to read: “Static or dynamic devices specifically used for supplying or absorbing Reactive Power that are connected at 100 kV or higher, or through a dedicated transformer with a high-side terminal operated at 100 kV or higher, or through a transformer that is designated in Inclusion I1.”
Yes
No
As expressed in our comment to question 5, we have concerns that the 75 MVA number could change in phase two of the project, creating unnecessary work in the future.
Yes
No
This particular Exclusion doesn’t address the qualifier as to the impact to the BES. We believe the qualification language in E2, in regards to behind the meter generation, should also be included in Exclusion E4 for clarification purposes.
Yes
We believe a reference should be made to the ROP changes which also provide a mechanism whereby Elements may be excluded or included in the BES. Without that reference, the proposed definition is not all inclusive of all means for exclusions or inclusions. We would suggest the definition be expanded to say “Unless modified by the lists shown below or as provided by Appendix 5C of the NERC Rules of Procedure, all Transmission…” This comment was submitted in response to the original posting and the response received was that it was inadvertently left out and that it would be placed back in, but we don’t see the reference in this draft of the definition.
Individual
Mary Downey
Redding Electric Utility
Yes

Yes
Yes
Redding believes that the definition should drive what appears in the Registry Criteria, therefore we only support this on a temporary basis based on the premise that the BES Phase 2 technical analysis will identify and provide technical support for determining the appropriate minimum MVA rating for a single unit or the aggregation of multiple units.
Yes
Redding recommends the following rewording: “The Primary Blackstart resources designated in the Transmission Operator’s restoration plan.” We believe it reduces reliability if all Blackstart generation either primary or secondary are required to be BES. Requiring all Blackstart capable units to be BES creates an incentive to leave certain blacstart units out of restoration plans in order to avoid BES inclusion. By making only the primary Blackstart unit a BES element then Transmission Operators will be more willing to include ALL Blackstart units in their plan thus creating a complete procedure for the Transmission Operator to restore the system.
Yes
Yes
Redding believes that an appropriate MVAr level should be established during Phase 2.
Yes
Yes
Yes
Yes
Yes
Individual
Paul Cummings
City of Redding
Yes
Redding is concerned that NERC has a predetermined definition of Distribution Facilities and will not evaluate networked distribution facilities fairly. NERC stated their predetermined position in their “MOTION TO INTERVENE AND COMMENTS OF THE NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION” filed in the case of the City of Holland, Michigan (Docket No. RC11-5-000). On page 10 and 11 of this motion, under the section labeled “A. Holland’s 138 kV lines are transmission rather that local distribution facilities” NERC states “Distribution facilities generally are characterized as elements that are designed and can carry electric energy (Watts/MW) in one direction only at any given time from a single source point (distribution substation) to final load centers.” NERC is clearly states that only radial facilities are considered distribution facilities and are unwilling to consider that network facilities over 100Kv could be classified as Distribution Facilities. Holland’s claim of NERC over reaching their authority appears to have credibility. In conclusion, Redding supports the addition of Distribution Facilities as an exclusion but believes that the BES Definition phase 2 needs to clearly define the difference between Distribution and Transmission Facilities by identifying the equipment “necessary for the Reliable Operation of the interconnected bulk power transmission system”.
Yes
Yes
Redding believes that the definition should drive what appears in the Registry Criteria, therefore we

only support this on a temporary basis based on the premise that the BES Phase 2 technical analysis will identify and provide technical support for determining the appropriate minimum MVA rating for a single unit or the aggregation of multiple units.
Yes
Redding recommends the following rewording: “The Primary Blackstart resources designated in the Transmission Operator’s restoration plan.” We believe it reduces reliability if all Blackstart generation either primary or secondary are required to be BES. Requiring all Blackstart capable units to be BES creates an incentive to leave certain blacstart units out of restoration plans in order to avoid BES inclusion. By making only the primary Blackstart unit a BES element then Transmission Operators will be more willing to include ALL Blackstart units in their plan thus creating a complete procedure for the Transmission Operator to restore the system.
Yes
Yes
Redding believes that an appropriate MVAr level should be established in during Phase 2.
Yes
Yes
Yes
Yes
Yes
Redding is concerned that phase 2 will not produce significant rules or criteria that further define the BES; the desire to dedicate adaquate resourses is currently high since FERC has a looming deadline upon NERC, however without deadlines Redding believes that NERC will find it difficult to find the expertise or desire to finish the Project.
Individual
Keith Morisette
Tacoma Power
Yes
Tacoma Power supports the core definition as currently written.
Yes
Tacoma Power supports Inclusion I1 as currently written.
Yes
Tacoma Power generally supports Inclusion I2 and deferring the appropriate quantitative thresholds to those that will be determined in Phase 2. However, the term “gross individual” and “gross aggregate” nameplate rating, although industry used terms, are not industry defined or uniformly understood and applied. Nameplate ratings are determined from discussions and negotiations between the designer, supplier and the owner and it is the owner that makes the final determination of the generating station equipment nameplate ratings. Nameplate ratings for thermal or hydro plants may be based on such things as: fuel mix (best, worst and average), fuel delivery capacity, reservoir level, best efficiency point, normal operating point, ancillary equipment capacities, emissions and discharge restrictions, continuous versus peak output and designed versus installed and tested capacities. It would be more uniform to establish new or use existing criteria to define “gross individual” and “gross aggregate” nameplate ratings, such as that used in the Code of Federal Regulations CFR 18, Part 11.1, “Authorized Installed Capacity” for hydraulic units and CFR 18, Part 287.101, “Determination of Powerplant Design Capacity” for steam electric, combustion turbine and combined cycle units.
Yes
Tacoma Power generally support Inclusion I3 as written. We continue to believe the BES should only

include the Blackstart Resources that support a regional recovery. We propose changing Inclusion I3 to read, “Blackstart Resources identified in the Transmission Operator’s restoration plan and included in a regional restoration plan.”

Yes

Tacoma Power generally supports the Inclusion I4 as currently written. However, we support further refinement of the aggregate nameplate rating definition and support deferring the appropriate quantitative thresholds to those that will be determined in Phase 2.

No

Tacoma Power generally supports the intent of Inclusion I5 as currently written. However, we believe the definition of the MVAr threshold level must be included in the Phase 2 evaluation and should be determined in a similar manner to the generator threshold that will be determined for I2.

Yes

Tacoma Power generally supports the Exclusion E1 as currently written. However, the “note” at the end of E1 is confusing and can be interpreted inconsistently. We recommend moving the language from the “note” to part of the exclusion as its own section, as follows: (d) Normally-open switching devices between radial elements as depicted and properly identified on system one-line diagrams should not be used to deny this exclusion. Additionally, we believe it is not appropriate for E1 to state an MVA threshold in Section b) when determining such thresholds is the purpose for Phase 2. We urge the SDT to defer the determination of a MVA threshold in E1 to Phase 2.

Yes

Tacoma Power supports the Exclusion E2 as currently written.

No

Tacoma Power does not support the Exclusion E3 as currently written. We strongly believe that Section c) of E3 must replace the term “transfer path” with “Major Transfer Path” to distinguish these paths from any common ATC path. This revision is consistent with the existing language used in the form, Detailed Information to Support an Exception Request. Additionally, we believe it is not appropriate for E3 to state an MVA threshold in Section a) when determining such thresholds is the purpose for Phase 2. We urge the SDT to defer the determination of a MVA threshold in E3 to Phase 2. Finally, the term “non-retail generation” is not a universally understood term in the industry. We suggest that the SDT replace the phrase “non-retail generation” with “generation located on the retail customer’s side of the meter.”

Yes

Tacoma Power supports the Exclusion E4 as currently written.

No

Tacoma Power does not have any other concerns at this time. Thank you for consideration of our comments.

Individual

Rex Roehl

Indeck Energy Services

No

As acknowledged in the response to Question 12 comments on the previous BES definition, the BES definition is expansive compared to the definition of the BPS in the FPA Section 215. The inclusion of the limited Exclusions is an attempt to remedy the situation. However, the Exclusions need to include a fifth one that if, based on studies or other assessments, it can be shown that any tranmission or generator element otherwise identified as part of the BES is not important to the reliability of the BPS, then that element should be excluded from the mandatory standards program. There has never been a study to show that elements, such as a 20 MW wind farm, 60 MW merchant generator (which operates infrequently in the depressed market) in a large BA (eg NYISO) or a radial transmission line connecting a small generator are important to the reliability of the BPS. They are covered by the mandatory standards program through the registration criteria. The BES Definition is the opportunity to permit an entity to demonstrate that an element is unimportant to reliability of the BPS. The SDT has identified a small subset of elements that it is willing to exclude. By their very nature, these exclusions dim the bright line that is the stated goal of this project. However, the SDT’s foresight seems limited in its selections. Analytical studies are used to evaluate contingencies that could lead to

the Big Three (cascading outages, instability or voltage collapse). Such a study showing that a transmission or generation element is bounded by the N-1 or N-2 contingency would exclude it from the BES definition. For example, in a BA with a NERC definition Reportable Disturbance of approximately 400 MW (eg NYISO), a 20 MW wind farm, 60 MW merchant generator or numerous other smaller facilities would be bounded by larger contingencies. It would take more than six 60 MW merchant generators with close location and common mode failure to even be a Reportable Disturbance, much less become the N-1 contingency for the Big Three. Exclusion E5 should be “E5 - Any facility that can be demonstrated to the Regional Entity by analytical study or other assessment to be unimportant to the reliability of the BPS (with periodic reports by the Regional Entity to NERC of any such assessments).”
Yes
As acknowledged in the response to Question 12 comments on the previous BES definition, the BES definition is expansive compared to the definition of the BPS in the FPA Section 215. The inclusion of the limited Exclusions is an attempt to remedy the situation. However, the Exclusions need to include a fifth one that if, based on studies or other assessments, it can be shown that any tranmission or generator element otherwise identified as part of the BES is not important to the reliability of the BPS, then that element should be excluded from the mandatory standards program. There has never been a study to show that elements, such as a 20 MW wind farm, 60 MW merchant generator (which operates infrequently in the depressed market) in a large BA (eg NYISO) or a radial transmission line connecting a small generator are important to the reliability of the BPS. They are covered by the mandatory standards program through the registration criteria. The BES Definition is the opportunity to permit an entity to demonstrate that an element is unimportant to reliability of the BPS. The SDT has identified a small subset of elements that it is willing to exclude. By their very nature, these exclusions dim the bright line that is the stated goal of this project. However, the SDT’s foresight seems limited in its selections. Analytical studies are used to evaluate contingencies that could lead to the Big Three (cascading outages, instability or voltage collapse). Such a study showing that a transmission or generation element is bounded by the N-1 or N-2 contingency would exclude it from the BES definition. For example, in a BA with a NERC definition Reportable Disturbance of approximately 400 MW (eg NYISO), a 20 MW wind farm, 60 MW merchant generator or numerous other smaller facilities would be bounded by larger contingencies. It would take more than six 60 MW merchant generators with close location and common mode failure to even be a Reportable Disturbance, much less become the N-1 contingency for the Big Three. Exclusion E5 should be “E5 - Any facility that can be demonstrated to the Regional Entity by analytical study or other assessment to be unimportant to the reliability of the BPS (with periodic reports by the Regional Entity to NERC of any such assessments).”
Group
Antonio Grayson
Transmission
Yes
Yes
Yes
No

We agree with the changes but believe clarity would be added by changing the word “identified” to “designated”.
Yes
No
We believe that the size of the reactive power resource should be considered as a key factor to be part of BES. When considering generating resources, the size, e.g., greater than 75 MVA, was a key part of criteria to be included or excluded as BES. A similar approach should be applied when considering reactive power resources. We also suggest the removal of static reactive resources from this inclusion.
No
Subpart (b) uses the term "generation resources" while subpart (c) uses the term "non-retail generation", why are these different terms used? Further, why is it important that the term "non-retail generation" is used in subpart (c)? In addition, the SDT needs to clarify what the term "non-retail generation" means. Is this what is commonly referred to as "customer owned" or "behind-the-meter" generation? The change in version 2 that removed the requirement that an excluded radial system have an automatic interruption device at the single point of connection to the rest of the BES creates a problem. Three-terminal circuits are common below 230 kV. The "tapped portion" should not be left out of the BES since a fault on that portion takes out the whole line. We propose this revised language in the first sentence on E1: “E1 - Radial systems: A group of contiguous transmission Elements that emanates from a single point of connection of 100 kV or higher, where the connection has an automatic interruption device,…” Exclusion E1, subpart (c) uses the phrase "an aggregate capacity of … less than or equal to 75 MVA …". Exclusion E3. subpart (a) provides that the local networks "do not have an aggregate capacity of … greater than 75 MVA …". Why are these phrases stated differently even though they appear to address the same resources?
No
We suggest that clarification is needed for what is meant by E2 (ii), regarding generation on the customer’s side of the retail meter. Also, we would like for a clarification of the difference between the terms "retail load" and "retail customer load" as used in exclusions E2 and E3.
No
We would agree with the exclusion if the wording of the exclusion includes the following phrase (in italics) added at the end of E3 b): “Power flows only into the LN: The LN does not transfer energy originating outside the LN for delivery through the LN “under normal operating conditions”. What does the term "non-retail generation" mean? Can the term "non-retail generation in E3a be changed to simply "generation"?
Yes
Yes
The definition of the BES is referenced in several existing standards and the Statement of Compliance Registry Criteria. Southern Companies are concerned how this revised definition will impact entity registration, i.e., how will the revised definition be integrated into the Compliance Registry Criteria. The implementation plan should include how the integration is going to occur. The Rules of Procedure exception process should be further defined or referenced in this definition.
Group
Al DiCaprio
PJM
No
While we agree with the changes to the definition, we do not understand the purpose of the final sentence “This does not include facilities used in the local distribution of electric energy.” Since the issue of local (distribution) networks is addressed under Exclusion E3, we do not see the added benefit of the referenced text.
Yes

Yes
No
We support the SDT's decision to exclude the cranking paths from the BES definition since testing and verification of the use of facilities in the cranking path is already covered by the appropriate EOP standards. This inclusion is extraneous given there is already a designation specific for system restoration covered by an existing standard to recognize their reliability impacts and to ensure their expected performance. NERC Standards EOP-005-2 stipulates the requirements for testing blackstart resource and cranking paths. This testing requirement suffices to ensure that the facilities critical to system restoration are functional when needed, which meets the intent of identifying their criticality to reliability. We therefore suggest removing Inclusion I3.
Yes
The revised Inclusion I4 does clarify that there is no requirement for a contiguous BES path from the dispersed generation resources to the point of interconnection to the BES.
Yes
No
While we support the provisions of E1 in principle, we are seeking clarification to the following issues. Does the connection voltage of generation referred to in E1.b affect whether a radial system could be excluded under E1? Please clarify the meaning of "non-retail" generation used in E1.c.
Yes
Yes
Yes
Yes
(1) We support a phased approach proposed in the draft supplemental SAR. Development of the revised BES definition is an important and complex undertaking. The product of this work is fundamental to establishing the applicability of NERC Reliability Standards. The issues identified for attention in Phase 2 of this project warrant careful investigation and as such allowing additional time to properly research and provide for stakeholders to vett them is justified. Specific to the assessment of raising the generator rating threshold from 20 MVA to 75 MVA per unit, we would point out that this needs to be looked at from a different perspective. Industry debates so far have been on the apparent lack of reliability contribution and economic benefits for keeping the threshold at 20 MVA. The former point implies that any negative reliability impact that could be contributed by a generator higher than 20 MVA but lower than 75 MVA could be negligible. Some examples of the standards that the 20-75 MVA units may need to comply with to ensure reliability are: • Voltage and frequency ride through capability • Voltage control (AVR, etc.) • Underfrequency trip setting • Protection relay setting coordination • Data submission for modeling; verification of capability and model A Venn diagram developed by an industry group shows that generators at 20 to 74.99 MVA account for about 13.8% of the total installed capacity in the US. Out of this, 3.0% are currently deemed non-BES whereas the other 10.8% are BES. We do not know how the BES reliability may be affected if these 10.8% generators are no longer deemed BES facilities (after an increase of threshold to 75 MVA) and subject to compliance with NERC standards, including those mentioned above. An assessment from both a positive contribution and a negative impact viewpoints are thus required to aid the determination of the merit of raising the rating threshold. (2) The draft Implementation Plan for the BES definition states "Compliance obligations for Elements included by the definition shall begin 24 months after the applicable effective date of the definition." We are concerned that the stated implementation period may be insufficient time to complete transition plans for newly identified BES Elements and Facilities, where those plans require procurement, installation and commissioning of additional equipment. We believe a period of 24 months may be more appropriate.
Individual
Frank Cumpton

BGE
Yes
No comment.
Yes
No comment.
Yes
No comment.
Yes
No comment.
Yes
No comment.
Yes
No comment.
No
During the previous comment period, BGE asked for clarification regarding the exclusion of “radial facilities”. The particular example configuration in question involved two 115 kV lines emanating from two different points of connection and “tied” on the “low side” at 34.5 kV. The SDT responded that this was not a radial facility but would be excluded under the E3-Local Network exclusion. BGE believes that this particular configuration should be excluded under the E1-Radial Systems exclusion. BGE does not beleive that two otherwise radial lines are made “non-radial” because they are tied at a voltage lower than 100 kV.
Yes
No comment.
Yes
No comment.
Yes
No comment.
No
No comment.
Group
Irion A. Sanger
Davison Van Cleve PC
Yes
The Industrial Customers of Northwest Utilities (“ICNU”) submits the following comments regarding the North American Electric Reliability Corporation’s (“NERC”) proposal for defining the Bulk Electric System (“BES”). ICNU is an incorporated, non-profit association of large end-use electric customers in the Pacific Northwest, with offices in Portland, Oregon. ICNU previously submitted comments in the Western Electricity Coordinating Council’s (“WECC”) process for defining the BES. ICNU’s members are not electric utilities, but some ICNU members own substations that are interconnected to utility transmission systems and utility distribution systems. In addition, in some cases, ICNU members operate local distribution facilities behind their substations to serve their end-use loads. In some cases, the ICNU member’s interconnection to the utility-owned transmission system or distribution system is via a utility-owned radial line; and, in others, the ICNU member’s distribution system is looped into the utility’s transmission system for reliability purposes. Finally, some ICNU members have local distribution systems that include the ICNU member’s backup generating facilities. ICNU is submitting comments, because these facilities arguably could fall within NERC’s proposed definition of BES. ICNU appreciates the work that NERC has done to date, and encourages NERC to develop a rule that recognizes the unique aspects of the Pacific Northwest transmission system and the particular needs of end-use customers. Given the arbitrary requirements and limitations imposed by the Federal Energy Regulatory Commission, ICNU supports NERC’s overall approach to defining the BES. NERC has proposed a bright line rule in which all transmission elements operated 100 kV or higher will be included in the definition, subject to certain inclusions and exclusions. ICNU supports NERC’s goal of

excluding facilities in the local distribution of electric energy. NERC proposes three general classes of exclusions, which includes certain radial systems, generating units that serve all or part of retail customer's load, and local networks. Specifically, NERC proposes that: 1) radial systems 100 kV and higher shall be excluded if they only serve load, or only include certain generation resources less than 75 MVA; 2) generating units that serve customer load on the customer meter are excluded if the net capacity provided to the BES does not exceed 75 MVA and standby, back up and maintenance power services are provided; 3) local networks operated less than 300 kV that distribute power to load rather than transfer bulk power across the interconnected system; and 4) reactive power owned and operated by a retail customer solely for its own benefit. ICNU supports these exclusions; however, ICNU is concerned that certain end-use retail customer facilities that do not impact the BES may still be inappropriately included. NERC appears to recognize this possibility and includes an exception process to include or exclude facilities on a case-by-case basis. ICNU urges NERC to develop this exception process, and to review the work by WECC regarding how to structure an appropriate exception. At a minimum, the exception process should not require end-use customers to perform costly and complex studies, but should instead require utilities or regional organizations that have the relevant expertise to conduct the necessary studies to determine if a specific facility should be removed or included in the BES. ICNU is also concerned about the term "non-retail generation," which does not appear to have a corresponding definition. ICNU understands that non-retail generation is intended to apply to generation behind the retail customer's meter. ICNU recommends that net metered systems should not count towards the generation limits for radial and local network systems.

Additional Comments Submitted:

Salt River Project:

Definition of Bulk Electric System (BES):
The Blackstart "Cranking Path" has been deleted from Inclusion 3 of the BES definition. However, NERC Standards EOP-005 and CIP-002, R1.2.4, require documenting the Cranking Path. In addition, CIP-002-4 identifies the Cranking Path as a Critical Asset in Attachment 1. Compliance to the NERC Standards needs to be an exact science whenever possible. SRP does not argue the inclusion or exclusion of Cranking Path. However, if it is excluded, guidance must be provided on whether or not a Cranking Path is subject to the previously mentioned Standards.

Additional Comments Submitted:

PacifiCorp

5. The SDT has revised the specific inclusions to the core definition in response to industry comments. Do you agree with Inclusion I4 (dispersed power)? If you do not support this change or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments.

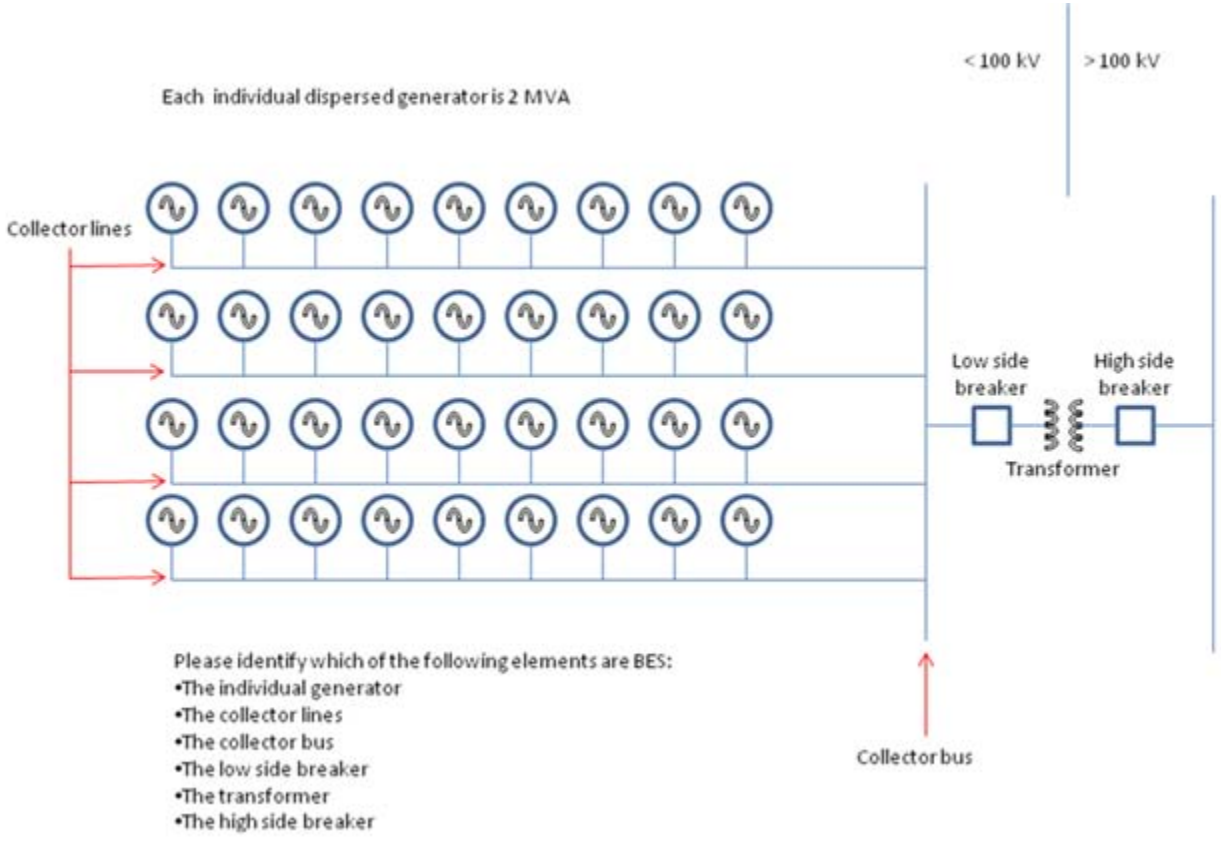
Yes:

No: X

Comments: Setting a dispersed power producing resource limit to 75 MVA at a common point discriminates against single generator owners who own generators between 20 MVA and 75 MVA (inclusion I1), typically connected at a common point and requires such owners to be subject to additional standards that dispersed power producing owners are not required.

However, even with this concern, PacifiCorp supports the entire BES definition in its current form based on the timeframe under which the SDT is operating and with an emphasis based on a phase II SAR to address PacifiCorp's objections regarding generation levels.

Under the attached scenario, please identify which elements would be considered BES:



Additional Comments Submitted

RFC Staff:

Bulk Electric System (BES): Unless modified by the lists shown below, all Transmission Elements operated at 100 kV or higher and Real Power and Reactive Power resources connected at 100 kV or higher. ~~This does not include facilities used in the local distribution of electric energy.~~ The BES includes:

~~**Inclusions:**~~

- I1 - Transformers with primary and secondary terminals operated at 100 kV or higher. ~~unless excluded under Exclusion E1 or E3~~for local distribution or retail customers~~.~~
- I2 - Generating resources as described in the ERO Statement of Compliance Registry Criteria including the generator terminals through the high-side of the step-up transformer(s), connected at a voltage of 100 kV or above.
- I3 - Blackstart Resources and associated designated ~~blackstart~~ Cranking Paths operated at 100 kV or higher, identified in the Transmission Operator's restoration plan. ~~regardless of voltage level.~~
- ~~I4 - Dispersed power producing resources as described in the ERO Statement of Compliance Registry Criteria utilizing a system designed primarily for aggregating capacity, connected at common point at a voltage of 100 kV or above.~~
- **I4~~5~~** –Static or dynamic devices dedicated to supplying or absorbing Reactive Power that are connected at 100 kV or higher, or through a dedicated transformer with a high-side voltage of 100 kV or higher, or through a transformer that is designated in ~~Inclusion~~ I1.

This definition does not include facilities used in the local distribution of electric energy or retail customers, which are: ~~**Exclusions:**~~

- E1 - Radial systems: A group of contiguous transmission Elements that emanates from a single point of connection of 100 kV or higher from a single Transmission source originating with a single~~n~~ automatic interruption device and:
    a) Only serves Load. Or,
    b) Only includes generation resources not identified in ~~Inclusion~~ I3, with an aggregate capacity less than or equal to 75 MVA (gross nameplate rating). Or,
    c) Where the radial system serves Load and includes generation resources, not identified in ~~Inclusion~~ I3, ~~-~~ with an aggregate capacity of non-retail generation less than or equal to 75 MVA (gross nameplate rating).

    Note - A normally open switching device between radial systems, as depicted on prints or one-line diagrams for example, does not affect this exclusion.
- E2 - A generating unit or multiple generating units that serve all or part of retail customer Load with electric energy on the customer's side of the retail meter 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.
- E3 - Local Network (LN): A group of contiguous transmission Elements operated at or above 100 kV but less than 300 kV that distribute power to Load rather than transfer bulk power across the interconnected system. LN's emanate from multiple points of connection at 100 kV or higher to improve the level of service to retail customer Load and not to accommodate bulk power transfer across the interconnected system. The LN is characterized by all of the following:

a) Limits on connected generation: The LN and its underlying Elements do not include generation resources identified in ~~Inclusion~~ I3 and do not have an aggregate capacity of non-retail generation greater than 75 MVA (gross nameplate rating);

b) Power flows only into the LN: The LN does not transfer energy originating outside the LN for delivery through the LN; and;

c) Not part of a Flowgate or transfer path: The LN does not contain a monitored Facility of a permanent Flowgate in the Eastern Interconnection, a major transfer path within the Western Interconnection, or a comparable monitored Facility in the ERCOT or Quebec Interconnections, and is not a monitored Facility included in an Interconnection Reliability Operating Limit (IROL).

- **E4** – Reactive Power devices owned and operated by the retail customer solely for its own use.

Note - Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process.