

Comment Form for 2nd Draft of Definition of BES (Project 2010-17)

Please **DO NOT** use this form to submit comments on the 2nd draft of the Definition of the Bulk Electric System (Project 2010-17). Use the [electronic comment form](#) **only** to submit comments. Comments must be submitted by **October 10, 2011**.

If you have questions please contact Ed Dobrowolski at ed.dobrowolski@nerc.net or by telephone at 609-947-3673.

Background Information Definition of the BES (Project 2010-17)

The SDT responded to the comments received for the first posting of the definition for this project by clarifying the core definition, inclusions, and exclusions to meet the concerns of the industry. The SDT has also utilized a variety of other inputs including work that was done by regional entities such as WECC, NPCC, RFC, and FRCC in coming up with the present definition. Another input was FERC Orders No. 743 and 743a which provided several specific directives on clarifying the existing definition. It should be noted that the revised definition does not address functional entity registration or standards requirements applicability. Those are separate issues.

The core definition represents a true bright-line; but, it is clear that by itself, it does not cover all of the known situations and configurations that are needed for a complete definition. Therefore, the SDT developed several specific inclusions and exclusions that will be added to the core definition to complete it. At the present time, the SDT has drafted five specific inclusions and four specific exclusions.

Inclusions represent those items that are included as part of the Bulk Electric System (BES) where they would not have been included as part of the simple core definition. The reasons that the SDT has added these items are as follows:

- I1 – Since transformers have windings operating at different voltages, it was felt that clarification was required so as to more explicitly identify which transformers were to be included in the BES. The SDT believes that the present draft provides this needed clarification.
- I2 – This inclusion represents a merger of the original Inclusion I2 and the original Inclusion I3 concerning generation thresholds.
- I3 – Blackstart units are considered vital to the overall operation of the BES. Consequently, the SDT has included Blackstart Resources. However, due to industry comments, the SDT has deleted the inclusion of Cranking Paths.
- I4 – This item was added in order to accommodate the effects of variable generation on the BES. The intent of this configuration is to include variable generation (e.g., wind and solar resources) with an aggregate rating greater than 75 MVA and was considered different enough from what was proposed in Inclusion I2 as to warrant a separate inclusion statement in order to provide greater clarity in this area.
- I5 – This is a new inclusion brought about by industry comments to clarify the inclusion of Reactive Power devices.

In addition to inclusions, in order to complete the picture, specific exclusions also need to be considered. The SDT has currently drafted four specific exclusions:

- E1 – This item was added to address the basic issue of radial systems. Radial exclusion was part of the existing definition and was supported moving forward in all of the regional work as well as Order No. 743 (and Order No. 743a). The SDT has

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clarified this exclusion in response to industry comments by deleting the automatic interruption device.

- E2 – This item was added to address the situation of behind-the-meter generation. The wording is basically extracted from the ERO Statement of Compliance Registry Criteria.
- E3 – Local networks were added to the exclusion list after considerable discussions among the SDT and various registered entities that have configurations meeting these conditions. The SDT believes that any network that simply supports distribution should be excluded from the BES. The SDT has clarified the language for the exclusion and added a 300 kV upper limit.
- E4 – The SDT has added an exclusion for Reactive Power devices used solely by retail customers for their own use as a result of comments received.

Several commenters objected to simply carrying through the generation and voltage thresholds from the ERO Statement of Compliance Registry Criteria as part of the revised definition. However, no respondents provided technical justifications for changing these values. Furthermore, the scope of this project deals mainly with responding to FERC Orders 743 and 743a which clearly stated that the intent of the order was to maintain the status quo and to only address those urgent issues identified in the order. Hence, the tight schedule that was provided in the order. After consulting with the NERC Board of Trustees and the NERC Standards Committee, the SDT has decided to forgo any attempt at changing generation or voltage thresholds at this time. There simply isn't enough time or resources to do those topics justice with the mandated schedule. Therefore, the focus of the SDT efforts will be to address the directives in Orders 743 and 743a. However, this does not mean that the issues will be dropped. Both the NERC Board of Trustees and the NERC Standards Committee have endorsed the idea that the Project 2010-17 SDT take a phased approach to this project with a new Standards Authorization Request (SAR) to address generation thresholds as well as several other issues that have arisen from SDT deliberations. Issues such as what is necessary for the reliable operation of the BES, whether the BES needs to be a contiguous, possible interconnection difference, who is a user of the BES, and correlation of the definition of BES and the ERO Statement of Compliance Registry Criteria will be addressed with this new SAR. The proposed SAR has been posted for information purposes only concurrent with the second posting of this project. A formal comment period will follow.

In parallel with the definition project, another team has been set up to develop a change to the NERC Rules of Procedure (RoP) to allow for entities to technically justify excluding Elements from the BES that might otherwise be included according to the proposed definition. This same process would be used by Registered Entities to justify including Elements in the BES that might otherwise be excluded according to the proposed definition. This RoP team will develop the process for seeking an exemption from the definition but the DBESSDT will develop the criteria necessary for applying for an exemption through the standards development process. The DBESSDT developed exception criteria is posted separately but simultaneously to the second posting of the definition.

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You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

The SDT has asked one specific question for each specific aspect of the definition.

1. The SDT has made clarifying changes to the core definition in response to industry comments. Do you agree with these changes? If you do not support these changes 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: 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

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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.

2. The SDT has revised the specific inclusions to the core definition in response to industry comments. Do you agree with Inclusion I1 (transformers)? 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: 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).

3. The SDT has revised the specific inclusions to the core definition in response to industry comments. Do you agree with Inclusion I2 (generation) including the reference to the ERO Statement of Compliance Registry Criteria? 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: 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.

4. The SDT has revised the specific inclusions to the core definition in response to industry comments. Do you agree with Inclusion I3 (blackstart)? 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:

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No: X

- Comments: 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.
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: 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."

6. The SDT has added specific inclusions to the core definition in response to industry comments. Do you agree with Inclusion I5 (reactive resources)? 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: 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.

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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.

7. The SDT has revised the specific exclusions to the core definition in response to industry comments. Do you agree with Exclusion E1 (radial system)? 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: X

No:

Comments: 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.

8. The SDT has revised the specific exclusions to the core definition in response to industry comments. Do you agree with Exclusion E2 (behind-the-meter generation)? 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: X

No:

Comments: 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.

9. The SDT has revised the specific exclusions to the core definition in response to industry comments. Do you agree with Exclusion E3 (local network)? 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: X

No:

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

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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.

10. The SDT has added specific exclusions to the core definition in response to industry comments. Do you agree with Exclusion E4 (reactive resources)? 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: X

No:

Comments: 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?).

11. Are there any other concerns with this definition that haven't been covered in previous questions and comments remembering that the exception criteria are posted separately for comment?

Yes: X

No:

Comments: 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.