

Unofficial Comment Form

Bulk Electric System Exceptions Process Working Group Revisions to the Bulk Electric System Definition Reference Document

Do not use this form for submitting comments. Use the [Standards Balloting and Commenting System \(SBS\)](#) to submit comments on **Bulk Electric System Definition Reference Document by 8 p.m. Eastern, Monday, September 10, 2018.**

Additional information is available on the [project page](#). If you have questions, contact [Ryan Stewart](#) (via email) or at 404-446-9712.

Background regarding the Bulk Electric System (BES) Definition Reference Document

During the course of [Project 2010-17 Definition of Bulk Electric System](#), the standard drafting team created the BES Definition Reference Document explaining how the revised BES definition should be applied. This document has been updated by the Bulk Electric System Exception Process Working Group (BEPWG) to reflect experiences from initial implementation of the BES definition.

The BES Definition Reference Document is a document intended to assist the industry with the application of the BES definition. Examples are provided where appropriate but should not be considered as all-inclusive. The document is intended to provide clarification and explanations for the application of the BES definition in a consistent, continent-wide basis for the majority of BES Elements.

Background regarding the BEPWG

The purpose of the BEPWG, as outlined in the BEPWG Scope document, is to develop and support a consistent, cost-effective Regional approach, through active communication, across the ERO Enterprise, for processing requests under Appendix 5C of the NERC Rules of Procedure (ROP) for BES Exception Requests (Exception Requests or ERs) that provides for effective and efficient NERC Integration. The BEPWG provides a collaborative forum related to the ERO Enterprise's consistent application of the BES Definition during the development of Regional BES ER Recommendations to NERC. The BEPWG establishes an opportunity for the sharing of unique and 'one-off' scenarios between the Regional Entities to build consensus in the BES definition application, share lessons learned and to further ensure consistency in the application on a continent-wide basis. The Operations Leadership Team (OLT) (through the BEPWG) ensures efficient and effective reliability administration of the process spelled out in Appendix 5C.

In addition, the BEPWG may be assigned projects by the OLT or the ERO Executive Management Group (EMG) consistent with the ERO Enterprise strategic plan, the execution of the Regional Entity Delegation Agreements (RDAs), FERC Guidance, and the NERC ROP.

Overview of the 2017-2018 BEPWG Project

In July 2017, the BEPWG began a comprehensive review and assessment of the BES Definition Reference Document to determine if it continues to correctly reflect the application of the BES definition based on the experience and knowledge gained from the initial three (3) year implementation of the definition and to determine the need, if any, to improve upon the clarity or provide new insight into the application of the BES definition. As a result of the review, the BEPWG identified several areas which could benefit from improved clarity and areas where additional examples could be used to address lessons learned from the initial implementation of the BES definition. For each of the revisions and additional examples presented, the BEPWG undertook an additional review to ensure that the revised reference document continues to present guidance that can be applied on a continent-wide basis and achieve consistent results. Below is a general summary of the type and nature of the revisions developed by the BEPWG.

General Overview of Proposed Revisions

1. Section II.2 BES Inclusion I2
 - a. Experience in the implementation of the BES Definition associated with generation facilities has shown the ERO that entities in some cases have attempted to immediately apply 'exclusions' to their facilities instead of following the 'hierarchical application process' described in the reference document. In order to emphasize the need to follow the described process the BEPWG has developed new examples and diagrams associated with 'behind-the-meter' generation which have been added to the BES Inclusion I2 section to illustrate that facilities need to be included in the BES prior to applying the exclusion criteria (corresponding revisions were included in Section III.2 BES Exclusion E2 – see description below).
2. Section II.4 BES Inclusion I4
 - a. Experience in the implementation of the BES Definition associated with dispersed power producing resources has shown the ERO that some entities are experiencing inconsistent results when the facilities have multiple owners. The BEPWG has developed new examples and diagrams associated with dispersed power producing resources which have been added to the BES Inclusion I4 section to illustrate that facilities need to be evaluated on a component basis and that ownership or operational responsibilities do not impact the application of the BES definition.
3. Section III.1 BES Exclusion E1 & Section III.3 BES Exclusion E3
 - a. Experience in the implementation of the BES Definition associated with radial systems and local networks has shown the ERO that entities are experiencing inconsistent results when the networked facilities have multiple (more than two (2)) connections at 100 kV and above. The BEPWG has developed new examples and diagrams associated with configurations that have multiple (more than two (2)) connections at 100 kV and above, which have been added to the BES Exclusion E1 section to illustrate that these types of facilities need to be evaluated as local networks, with supporting language directing the reader to Section III.3 BES Exclusion E3 where new examples and diagrams are evaluated based on the local network criteria.

4. Section III.3 BES Exclusion E2

- a. Experience in the implementation of the BES Definition associated with ‘behind-the-meter’ generation facilities has shown the ERO that many entities have multiple ‘behind-the-meter’ generators at single and multiple locations and that the reference document was essentially silent on these configurations. The BEPWG has developed new examples and diagrams associated with multiple ‘behind-the-meter’ generation facilities and that have been added to the BES Exclusion E2 section to promote consistent application of the exclusion criteria.

5. General Revisions (Section Introductions and Summaries)

- a. Several revisions that improve the clarity of the language used in the reference document associated with the following concepts:
 - i. Ownership and/or operational responsibility
 - ii. Generator Bus Configurations
 - iii. Generator Interconnection Facilities
 - iv. Single and Multiple ‘Behind the Meter’ Generators
 - v. Applicable references to FERC Orders identified which support the application of the BES definition

30-day informal comment period

The proposed revisions to the BES Reference Document are posted for a 30-day informal comment period. The BEPWG will review all comments submitted and incorporate, as appropriate, proposed revisions to the reference document. The BEPWG requests that you focus your comments on the proposed revisions and on suggestions for areas of improvement in the document.

Comments or questions relating to the application of the BES definition for specific scenarios should be directed to your Regional Entity for assistance in the evaluation.

Questions

1. **For Section II.2 BES Inclusion I2:** Do you agree with the proposed revisions to *Section II.2 BES Inclusion I2* to include examples and diagrams associated with ‘behind-the-meter’ generation? If not, please explain your specific concerns, and what revisions you propose to address those concerns.

Yes

No

Comments:

2. **For Section II.4 BES Inclusion I4:** Do you agree with the proposed revisions to *Section II.4 BES Inclusion I4* to include examples and diagrams associated with dispersed power producing resources to illustrate how facilities with multiple owners should be evaluated? If not, please explain your specific concerns, and what revisions you propose to address those concerns.

Yes

No

Comments:

3. **For Section III.1 BES Exclusion E1 & Section III.3 BES Exclusion E3:** Do you agree with the proposed revisions to *Section III.1 BES Exclusion E1 & Section III.3 Exclusion E3* to include examples and diagrams associated with networked facilities that have multiple (more than two (2)) connections at 100 kV or above to illustrate how these facilities should be evaluated? If not, please explain your specific concerns, and what revisions you propose to address those concerns.

Yes

No

Comments: **The proposed revisions are unsupported by, and indeed conflict with, the BES Definition. Proposed Figures E1.4 and E1.20 should be revised to indicate that Exclusion E1 applies in both cases, as each diagram depicts three radial systems. Proposed new Figures E3.6, E3.7, E3.10, and E3.11 should be deleted, as the systems depicted should be evaluated and excluded under E1. (The exceptions process is of course always available to add any otherwise-excluded facilities to the BES that have a material impact on reliability due to an atypical configuration or other circumstances.)**

Note 2 to E1 states: "The presence of a contiguous loop operated at a voltage level of 50 kV or less, between configurations being considered as radial systems, does not affect this exclusion." Had the SDT intended that only 2 connection points be permitted, they would have instead written "between no more than two configurations."

If there were a reliability concern with the current, unbounded Note 2, the BES Definition would need to be revised. But there does not appear to be any reliability gap; the September 2013

White Paper that NERC submitted to FERC as part of its December 2013 filing in support of Note 2, and on which FERC relied in approving Note 2, indicates that the impedance of the "looped" system is primarily determined by the voltage level. The number of connection points (number of transformers) should not be expected to play a significant role in the relative impedance of the lower-voltage loop. There is no engineering reason why adding an additional connection point to a system would significantly increase that system's reliability impact, provided that all connection points remain internally connected at less than 50kV. The White Paper's use of 2 points of connection for modeling purposes was a reasonable simplifying assumption, not an implicit limitation on the applicability of Note 2.

Proposed new Figure E1.20 compounds the problems with proposed Figure E1.4 by asserting that a normally open device on the 50kV loop does not change the fact that the system has 3 points of connection and thus will not be considered under E1. This question should never arise in the first place, since the system in Figure E1.20, like the system in Figure E1.4, would qualify for E1 under Note 2 even without the normally open device. But it nevertheless bears pointing out that the proposed treatment of the normally open device in Figure E1.20 is inconsistent with the text of the BES definition --pursuant to E1 Note 1, "A normally open switching device between radial systems, as depicted on prints or one-line diagrams for example, does not affect this exclusion." A N.O. device is considered open for BES determination purposes, so the configuration in E1.20 is effectively two separate radial systems, one of which includes a sub-50kV loop.

We also note an unrelated error--according to the Table of Contents, the generator in Figure E1.6 should be non-BES, but instead, in the clean revised version, Figure E1.6 appears to be a repeat of Figure E1.5, with the original version of Figure E1.5 mistakenly deleted.

4. **For Section III.3 BES Exclusion E2:** Do you agree with the proposed revisions to *Section III.3 BES Exclusion E2* to include examples and diagrams associated with multiple 'behind-the-meter' generators at single and multiple locations? If not, please explain your specific concerns, and what revisions you propose to address those concerns.

Yes

No

Comments:

5. **For the ‘General’ Revisions (Section Introductions and Summaries):** Do you agree with the proposed general revisions contained in the Section Introductions and Summaries? If not, please identify the specific revision, explain your specific concerns, and what revisions you propose to address those concerns.

Yes

No

Comments: **The introduction to Chapter I5 includes the sentence “It is important to note that Inclusion I5 identifies only static or dynamic ‘devices’ to be included by meeting the qualifying connection criteria, and does not include any of the associating qualifiers (i.e., associated dedicated transformers).” The text beginning “the associating qualifiers” is unclear; we suggest instead “the associated equipment (e.g. associated dedicated transformers).”**

6. The BEPWG is currently working to resolve BES definition application issues associated various emerging technologies and will be producing subsequent revisions for consideration. Therefore, the BEPWG is seeking additional input on potential future revisions to the BES Definition Reference Document for consideration and potential inclusion. Please identify and explain your specific concerns and what revisions you propose to address those concerns.

Comments: