Unofficial Comment Form
Project 2010-17 Definition of Bulk Electric System – Phase 2

Please **DO NOT** use this form for submitting comments. Please use the electronic form to submit comments on the Guidance Document. The electronic comment form must be completed by **8 p.m. Eastern on February 27, 2014.**

All documents and information about this project are available on the [project page](#). If you have questions please contact Ed Dobrowolski at [ed.dobrowolski@nerc.net](mailto:ed.dobrowolski@nerc.net) or by telephone at 609-947-3673.

**Background Information**
This posting is soliciting informal comment.

On November 18, 2010 FERC issued Order 743 and directed NERC to revise the definition of Bulk Electric System (BES) so that the definition encompasses all Elements and Facilities necessary for the reliable operation and planning of the interconnected bulk electric system. Phase I of Project 2010-17 Definition of Bulk Electric System reached a significant milestone on January 25, 2012 with the official filing of the revised definition with FERC. Phase 2 of Project 2010-17 was filed with FERC on December 13, 2013.

During the course of Project 2010-17 Definition of Bulk Electric System (DBES), several commenters requested the Standard Drafting Team (SDT) to create a guidance document explaining how the revised definition will be applied. The SDT developed such a document for Phase 1 and has now updated that document to reflect Phase 2.

The purpose of this document is to assist the industry with the application of the revised definition that FERC proposed to approve in its June 22, 2012 Notice of Proposed Rulemaking (NOPR). 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 revised definition in a consistent, continent-wide basis for the majority of BES Elements.

These examples reflect the professional opinion of the DBES SDT and are provided in good faith for illustrative purposes only. This guidance document is not an official position of NERC and will not be binding on enforcement decisions of the NERC Compliance Program.
You do not have to answer all questions. Enter comments in simple text format. Bullets, numbers, and special formatting will not be retained.

Q1. Do you have any questions or comments on the text and diagrams for Inclusion I1? If so, please be as specific as possible and cite figure numbers where appropriate.

☑ Yes
☐ No
Comments: The intention of the phrase “during the full application of the BES definition” on page 8 and similarly stated notes throughout the document is unclear to the user. The BES definition is applied in parts depending on the circumstances, so the meaning of the term “full application of the BES definition” is confusing.

Q2. Do you have any questions or comments on the text and diagrams for Inclusion I2? If so, please be as specific as possible and cite figure numbers where appropriate.

☑ Yes
☐ No
Comments: I2 uses the term generator, as does the registration criteria. Suggest that the term unit not be used as it may introduce confusion or ambiguity. The term “load” as shown in figure I2-6 (and other places where the term is used should be clarified to indicate that it does not mean station service load of a generating unit. Station service load at a generating unit should not be able to be used to obtain a “load” based exclusion.

Q3. Do you have any questions or comments on the text and diagrams for Inclusion I4? If so, please be as specific as possible and cite figure numbers where appropriate.

☑ Yes
☐ No
Comments: Figures I4-1, 2, 3, 4 have ‘Green identifies non-BES.’ Green as indicated in the color coding diagram on Page 7 indicates that an ‘Element is not included in the BES’. Suggest that ‘Green identified non-BES’ be removed from I4 diagrams or inserted in all other diagrams for consistency. Figure I4-2 suggest that “Unknown Configuration” be replaced with “Configuration Not Relevant to the Determination”. The comment on page 17 under collector systems “The SDT has addressed collector systems in a clear fashion.” Is editorial and can be removed.
Q4. Do you have any questions or comments on the text and diagrams for Inclusion I5? If so, please be as specific as possible and cite figure numbers where appropriate.

☐ Yes  ☒ No

Comments:

Q5. Do you have any questions or comments on the text and diagrams for Exclusion E1? If so, please be as specific as possible and cite figure numbers where appropriate.

☒ Yes  ☐ No

Comments: Figures E1-1,E1-2 diagrams have ‘Green identifies non-BES (excluded) radial system.’ Green as indicated in the color coding diagram represents Element not included in the BES on Page 24. Suggest that this be removed from E1 diagrams or inserted in all other diagrams for consistency. On page 24, suggest adding Brown to identify “Site Boundary”.

In figure E1-6 why is the transformer between the GSU and the single point of connection NOT BES? This example seems contradictory to the “contiguous elements” and the example depicted in figure I2-5 where the 25MVA generator and its multiple “step up transformers” are BES.

Q6. Do you have any questions or comments on the text and diagrams for Exclusion E2? If so, please be as specific as possible and cite figure numbers where appropriate.

☐ Yes  ☒ No

Comments:
Q7. Do you have any questions or comments on the text and diagrams for Exclusion E3? If so, please be as specific as possible and cite figure numbers where appropriate.

X Yes
☐ No

Comments: From page 61 of the document, (page 65 of the PDF version), add the following wording to improve clarity.

Transformers with the secondary side operated below 300kV may also be part of an Excluded E3 Local Network, even if the primary side is operated at greater than 300kV. The entire element must be operated at above 300kV for it to be ineligible for the Exclusion E3. For example, a 345-to-138kV or 500-to-121kV transformer may be excluded as part of an E3 Local Network. However, a 765-to-345kV transformer would not be eligible for exclusion as part of an Excluded E3 Local Network since the entire element operates above 300kV. A 345-to-13kV stepdown transformer is out of scope under the core definition, which requires that the entire element be operated at 100kV or above.

Q8. Do you have any questions or comments on the text and system diagrams for the hierarchical application of the definition? If so, please be as specific as possible and cite figure numbers where appropriate.

X Yes
☐ No

Comments: Suggest that the term Transmission be removed in the description of 69 kV facilities shown in green on Diagrams S1-3. Suggest adding the color PURPLE in the Key to the Diagram color coding to Page 68 and applying coloring to Figures (Co-generation flow) under Section V.

Q9. If you have any other comments on the Reference Document that you haven’t already mentioned above, please provide them here being as specific as possible.

Comments: Since the application of the definition is based on the hierarchical application of determining which elements are in or not in the BES (by exclusions or inclusions), we suggest moving the current section IV. Hierarchical Application of the Definition to Section 1 following the Introduction. Recommend that the BES definition be stated in the summary portion of the document.
to provide an overview before diving into the various pieces (inclusions and exclusions) in the application guide. At a minimum a cross reference to the final definition needs to be provided in this document.

There are application inconsistencies in the treatment of "radial lines". In similar situations radial lines are sometimes included, and other times excluded. In Figure E1-7, the radial line connecting a non-BES generator is included; in Figure E1.11, the radial line connecting load facilities are included. However, in Figure E1-19, the radial lines from the normally closed breaker to the load facilities are excluded; in Figure S1-11 for the portion of the system feeding the blackstart resource the radial lines connected to load facilities are also excluded. The lines mentioned in those examples should all be excluded.

Suggest the following wording revisions and clarifications to the Exclusion E4 write-up:

To Section III.4 BES Exclusion E4 beginning on page 79:

**E4.** Reactive Power devices installed for the sole benefit of a retail customer(s).

Exclusion E4 is dependent on the intended function of the Reactive Resource. Delete “therefore, figures were not developed for Exclusion E4 due to the simplicity of the language in the exclusion.”

Add the following wording:

Where the purpose of the Reactive Resource is to serve retail customers and not the BES, then the Reactive Resource may be excluded under Exclusion E4. Reactive Resources used to prevent retail customer service interruptions, e.g., from switching operations or fault clearing on Radial Systems and Local Networks, may be Excluded under E4. The Reactive Resource must not be dispatchable by a Reliability Coordinator (RC), Transmission Operator (TOP) or primarily impact the BES. The drafting team has identified the following configurations that represent example uses of Reactive Resources for the sole benefit of one or more retail customers. (Diagrams are available upon request).

**E4-1: Behind the Customer Meter**

A Reactive Resource installed at a single customer site behind the meter is excluded because it is for the sole benefit of that retail customer.
**E4-2: At a Distribution Area Station**

A Distribution Provider (DP) may install, own and/or operate a Reactive Resource at a Distribution Area Station to serve a retail customer or a group of retail customers, e.g., an industrial park. This device is excluded by the Core Definition that states:

**Bulk Electric System (BES):** … 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.
Figure E4-2: At a Distribution Area Station

This Reactive Resource is excluded because it is connected below 100kV, is part of a distribution facility, and is for the sole benefit of retail customers.

E4-3: Connected to an Excluded Radial System
A Transmission Owner (TO) may install, own and/or operate a Reactive Resource for the benefit of retail customers that is connected to a Radial System excluded from the BES under Exclusion E1.
Figure E4-3: Connected to an Excluded Radial System

This Reactive Resource is excluded because it is for the sole benefit of retail customers, is not dispatchable by the Reliability Coordinator (RC) or Transmission Operator (TOP) and therefore does not impact the BES, and is connected to an excluded Radial System.

E4-4: Connected to an Excluded Local Network

A Transmission Owner (TO) may install, own and/or operate a Reactive Resource connected to a Local Network excluded from the BES under Exclusion E3 for the benefit of retail customers connected to that excluded Local Network.

Figure E4-4: Connected to an Excluded Local Network

This Reactive Resource is excluded because it is for the sole benefit of retail customers, is not dispatchable by the Reliability Coordinator (RC) or Transmission Operator (TOP) and therefore does not impact the BES, and is connected to an excluded Local Network.