Please **DO NOT** use this form. Please use the [electronic comment form](#) to submit comments on the first draft of the Project 2010-17: Definition of the Bulk Electric System (BES) Technical Principles for Demonstrating BES Exceptions. **Only** submit comments on the first draft Technical Principles for Demonstrating BES Exceptions. The comments must be submitted by **June 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)**

In parallel with the definition project, another stakeholder team outside the standards development process has been set up to develop a change to the NERC Rules of Procedure (ROP) to allow for entities to apply for excluding Elements from the BES that might otherwise be included according to the proposed definition and designations. 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 and designations. This process would also be utilized for those situations where the core definition and designations do not clearly identify whether an Element is BES or not. The ROP team will develop the process for seeking an exception from the definition and designations, but the Definition of the BES Standards Drafting Team (DBESSDT), through the standards development process, has developed the criteria necessary for applying for an exception.

The exclusion exception process has been set up as a choice between two alternative forms of evidence. The first choice is seen as less onerous in nature as it does not require extensive technical analysis. An entity must choose which path it wants to pursue.

The inclusion exception process requires more detailed analysis and only one choice is provided.

The first draft of the criteria that has been posted contains the evidence that must be presented by an entity seeking an exception as well as specific criteria for how that evidence will be evaluated. The SDT is seeking industry feedback not just on the approach being presented but also on the specific numeric thresholds that will be used. Comments received from this posting will help to determine the final criteria that the industry will be required to adhere to. Therefore, industry feedback is vital to the development process.

It should be noted that the actual application process is described in the Rules of Procedure document that has been posted concurrent with the criteria document.
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.

1. Exclusions - The SDT has set up one path for evidence that does not include extensive technical analysis. It consists of 4 items, all of which must be addressed in order to submit a completed request for exclusion. The first item involves proximity to Load and requests industry feedback on how to measure this variable. Do you agree with this requirement? If you do not support this requirement or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments. In addition, in the comment field, please provide your thoughts on the appropriate impedance value to replace 'TBD,' including technical rationale for your argument.

Yes:  
No: X

Comments:

1.a.i. Electrical Proximity - If impedance is to be used as a measure of electrical proximity, which in turn is a replacement for geographical proximity, then how would the presence of parallel lines, capacitors, phase-angle regulators (PARs), tap-changing transformers, generation and reactors be treated in determining electrical proximity?

How does this approach effectively differentiate between transmission and distribution lines of the same voltage and length?

When using impedance, how is “greater than” determined?

Sum of the Impedances - Would the filing entity simply add up the in-series impedances for each radial Element to demonstrate its electrical proximity?

For example, would the sum of the impedances from this radial path example be equal to the sum of the two feeder and transformer impedances, i.e., measured from a 230 kV bus along a 230 kV feeder, through a 230/138 kV step-down transformer, and an in-series 138 kV feeder to a 138/13.8 kV step-down distribution transformer?

What impedance would the SDT apply to a PAR (or tap-changing transformer) and to the overall path if a PAR (or tap-changing transformer) were located in-series with the measured Elements?

1.a.ii. Power Flows - What is the meaning of “power flow data” as the term is used here and how is the meaning different from the term when used under 1.c. Power flows into the system, but rarely flows out? Should this sentence use the phrase “impedance data extracted from a load flow study” instead?

Entities should be required to identify the significance of the element’s physical characteristics. Such identification can be done through a simple checklist along with any relevant comments.

The SDT should revise the exception criteria to seek an alternative language and/or revise exclusion criteria (a), which will require entities to provide the previously stated information for their element.
2. Exclusions - The SDT has set up one path for evidence that does not include extensive technical analysis. It consists of 4 items, all of which must be addressed in order to submit a completed request for exclusion. The second item involves Element(s) treated as radial. Do you agree with this requirement? If you do not support this requirement 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 term “regional dispatch” is not defined. Provide a definition or reference to a definition to be used in making this determination. Recommend adoption of the alternate term “operational control.”

**1.1.b.ii, Operational Control** - The SDT should consider using the terms “under the operational control of a Balancing Authority.” It is instructive that the overarching requirement for a finding of transmission system integration in *Mansfield* was that the facilities be under operational control of the Independent System Operator (ISO).*


Replace the example in 1.b.i. with a clearer example.

Entities should be allowed to demonstrate the radial characteristics to determine if they are permitted for an exception, and demonstrate compliance with radial defining criteria.

3. Exclusions - The SDT has set up one path for evidence that does not include extensive technical analysis. It consists of 4 items, all of which must be addressed in order to submit a completed request for exclusion. The third item involves power flow. Do you agree with this requirement? If you do not support this requirement or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments. In addition, in the comment field, please provide your thoughts on the appropriate MWh value to replace ‘TBD,’ including technical rationale for your argument.

Yes: 

No: X

Comments: If an entity provides hourly MWh power flow data on a radial for a 12-month period (under v.) showing no power flow reversals, would transaction data (under i. through iv.) still be required? Could the entity just say “no transactional records?”

If there were power flow reversals, wouldn’t the power flow data (provided under v.) also show those, e.g., the amount and duration? Isn’t this request redundant?

If reversing power flows on a feeder caused it to fail one of the criteria, could the radial still be excluded, or is it necessary for the Element to pass all requirements? Alternatively, could the entity choose to file for Exclusion of that Element under the
technical analysis option? What happens and what are the implications when the two approaches produce different outcomes?

Recommend that “iv. The maximum amount of energy flowing out” limit be set to no more than 24 hours of reverse power flows within any rolling 12-month period. Consider avoiding prescribing values and eliminate bullet (iv). The intended performance outcome should be described, but without setting values. This should not have any impact on the reliability of the transmission network if items 1, 2 and 3 are satisfied.

4. Exclusions - The SDT has set up one path for evidence that does not include extensive technical analysis. It consists of 4 items, all of which must be addressed in order to submit a completed request for exclusion. The fourth item involves power transport. Do you agree with this requirement? If you do not support this requirement 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:

5. Exclusions - The SDT has set up one path for evidence that includes technical analysis. Do you agree with this requirement? If you do not support this requirement or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments. In addition, in the comment field, please provide your thoughts on the proposed metrics for analysis and the appropriate values to replace ‘TBD,’ including technical rationale for your argument.

Yes: 

No: X

5a. Comments on approach: This method may allow an entity to exclude Elements which perform a transmission function, but that are not the most limiting Element.

“Not being necessary for reliability operation” needs definition. The SDT should consider developing a Guidance Document to provide examples and insights to guide prospective filing entities.

The TPL Reliability Standards already describe the full set of requirements for a reliable system. Why are added requirements necessary? Why would any such added criteria not conflict with the TPL Reliability Standards to the extent that they were either more or less restrictive?

Entities should be given an option to conduct an analysis to demonstrate if an element is necessary for the operation of a transmission network. NERC should specify all the relevant criteria categories to be listed as under 2 (a). NERC should avoid prescribing numerical values, but instead establish a range of values (or reference industry standards) that would be consistent with industry/ regional standards or practices without compromising the reliability of the transmission network.
5b. Comments on distribution factor measurement: 2.a. The term “Planning Assessment” is not a defined term in the NERC Glossary of Terms Used and should not be capitalized, or it should be defined.

2.a.iv.1. Distribution Factor - This is a judgment of what feeder power flow participation level is material and what is non-material.

While TDF and OTDF analysis is an indication of contributions from the element, the SDT should avoid setting values and instead describe the intended performance outcome from a distribution factor measurement. Note that ultimately NERC as an ERO or relevant regulatory authority will approve the application and can assess the performance outcome in their decision making presented in an entity’s application.

5c. Comments on allowable transient voltage dip measurement: Voltage dip is specified in terms of duration and retained voltage, usually expressed in percentage. Suggest that either the SDT avoid using voltage dip as a criteria, or clearly specify that the transient voltage not exceed the X limit of Y cycles (time). References to relevant industry standards such as IEEE standard 1346-1998 should be made.

5d. Comments on allowable transient frequency response: Suggest that for assigning a value for transient frequency response, entities conduct and submit to the SDT their quantitative and qualitative technical assessment based on the conditions of the element(s) under the application. Do not establish a fixed binary value within the exception criteria but rather focus on the performance outcome. See 5 (a) above.

5e. Comments on voltage deviation measurement: Voltage deviation is generally expressed as a percentage, between the voltage at a given instant at a point in the system. Do not establish a fixed binary value within the exception criteria but rather focus on the performance outcome.

Adequate voltage performance does not guarantee system voltage stability. Steady state stability is the ability of the grid to remain in synchronism during relatively slow or normal load or generation changes, and to damp out oscillations caused by such changes. The requirement should suggest that following checks are carried out to ensure system voltage stability for both the pre-contingency period and the steady state post-contingency period:

- Properly converged pre- and post-contingency power flows are to be obtained with the critical parameter increased up to 10% with typical generation as applicable;
- All of the properly converged cases obtained must represent stable operating points. This is to be determined for each case by carrying out P-V analysis at all critical buses to verify that for each bus the operating point demonstrates acceptable margin on the power transfer; and
- The damping factor must be acceptable (the real part of the eigen values of the reduced Jacobian matrix are positive).

6. Exclusions – Do you have other methods that may be appropriate for proving an exclusion claim? Or, other variables/measurements that may be added to the
requirements already shown in the posted Technical Principles for Demonstrating BES Exceptions? If so, please provide your comments here with technical rationale for why they should be considered.

Yes: X

No:

Comments: An impact-based method should be available for entities seeking Exclusions and Inclusions. The method should not allow excess regional discretion and unintended continent-wide variation. Recommend the power Transfer Distribution Factor (power TDF) approach mentioned in the reply to Question 5 above. If the Transmission Planner (TP) or Planning Authority (PA), were tasked with performing such analyses using standardized assumptions, then regional discretion could be minimized.

Technical Analysis must fundamentally use NERC – TPL methodology and testing requirements.

7. Inclusions - The SDT has set up only one path for evidence that includes technical analysis. Do you agree with this requirement? If you do not support this requirement or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments. In addition, in the comment field, please provide your thoughts on the proposed metrics for analysis and the appropriate values to replace ‘TBD,’ including technical rationale for your argument.

Yes:

No: X

7a. Comments on approach: Inclusions criteria should mirror the Exclusion criteria, and that consistent values should be employed for Inclusions here and for Exclusions above. That is, for example, if 0.95 to 1.05 (+/- 5%) p.u. is adopted as an acceptable voltage deviation range for Exclusions, then Elements resulting in post-transient system voltage deviations outside that range should be candidates for Inclusion.

Further, all assumptions should also be fully documented for any proposed Inclusions. Also refer to comments on exclusions.

7b. Comments on distribution factor measurement: See reply to Questions 5b and 6 above.

7c. Comments on allowable transient voltage dip measurement: Refer to the response to Question 5c

7d. Comments on allowable transient frequency response: Refer to the response to Question 5d

7e. Comments on voltage deviation measurement: See reply to Questions 5e and 6 above.

8. Do you have concerns about an entity’s ability to obtain the data they would need to do the indicated technical analyses? If so, please be specific with your concerns so that the SDT can fully understand the problem and address it in future drafts.
Yes:

No: X

Comments:

9. Are you aware of any conflicts between the proposed approach and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement, or jurisdictional issue? If so, please identify them here and provide suggested language changes that may clarify the issue.

Yes: X

No:

Comments: It is imperative to understand that the NERC’s revised definition will have a direct impact on entities across North America and may conflict with regulatory requirements, Codes, and Licenses. FERC in its Orders 743 and 743A has directed NERC to address these concerns. For Ontario, the BES exception criteria shall meet the expectations of Ontario’s regulator (Ontario Energy Board) which has the sole authority and responsibility for the reliability of customer connections and loads within Ontario. Therefore, it will be necessary to accommodate NERC’s proposed definition of BES or the exception process with the Ontario situation. The SDT and RoP teams should:

- Modify the exception criteria and procedure to provide regulatory flexibility with requirements to conduct basic technical analysis, to allow entities to consistently present their cases to the ERO and/or the regulator for a step by step expedited evaluation.

- Include provisions in both the NERC exception criteria and exception process for federal, state and provincial jurisdictions. These provisions should provide clear guidance so that, if and when there are deviations from the exception criteria, they are identified with technical and regulatory justifications ensuring there is no adverse impact on the interconnected transmission network.

- Understand that the path to generating facilities need not be always BES contiguous. Generating units can/should be required to be planned, designed, and operated in accordance with a subset of NERC Standards, but should not always require contiguous paths.

10. Are there any other concerns with this approach that haven’t been covered in previous questions and comments? Please be as specific as possible with your comments.

Yes: X

No:

Comments: Exception criteria should be crafted at a high-level with key menu items of assessment that can be followed continent-wide by entities to put forward their exception(s) for element(s) that are not necessary for the interconnected transmission network based on technical assessment, evidence and justification for unique characteristics, configuration, and utilization.

(Also see suggestions/comments in Question 6)