

Dear WECC BESDTF Committee:

Enclosed are the Public Power Council's comments on Proposal 2 of the Bulk Electric System Definition Task Force (BESDTF). The first section includes our general comments, along with comments on specific issues that are important to our utility. Following the first section we provide the answers to the questions posed by the BESDTF. We firmly believe that the BESDTF proposal is a clear implementation within the NERC Registry Criteria and WECC's delegated authority, and should not require approval or further delay in implementation once approved by the WECC Board of Directors.

General Introductory Comments:

The BESDTF proposal is exemplary and provides the hope of consistently and objectively resolving the contentious matter of defining the Bulk Electric System (BES). The application of a "bright-line" (100kV) that separates the BES from non-BES facilities and equipment has resulted in very significant, unnecessary and unreasonable costs to electric utilities. Unfortunately, these costs are not yielding any significant benefit in terms of increased reliability of the BES. However, it is important to note that the costs associated with the determination of which facilities, and devices, are part of the BES are real and significant. Financial and human resources are always at a premium, more so during a recession. Thus, we must be wise in how we allocate our financial and human resources. It is our concern, that the current ambiguous definition of the BES is draining financial and human resources to comply with standards which do not contribute, or affect the BES and do not add any more reliability for our customers or to the "real" BES.

We very much support the current BES definition proposal from the BESDTF. We believe that this definition utilizes WECC's broad deference that NERC has provided to the regions in defining the BES and identifying entities for registration. We believe that the BESDTF has done an outstanding job in providing a fair, consistent, and objective definition to a very complex concept. We are especially pleased with the particular attention that the Task Force has given to radial systems. We believe that the BESDTF captures the intent policy makers had when they launched this project. We would like to see a stronger statement linking the BES and the Bulk Power System (BPS), but, in general, we are very pleased with the work of the BESDTF.

Comments on Specific Issues:

1. Favoring the proposed method for including facilities between 100-199kV ONLY if they met any of the criteria in the Inclusion Provision Table 1, rather than a blanket inclusion (100kV).

We believe that voltage alone is not sufficient to determine whether a facility, or element, should be included in the BES. We support the BESDTF proposal that moves the blanket inclusion level to 199kV, the Table 1 criteria for inclusion, and using a Material Impact Assessment to ultimately decide inclusion, or exclusion. This approach will provide a more refined assessment for the inclusion of facilities and should be less over-inclusive while including those facilities important to BES reliability.

Concerns have been expressed that Proposal 2's method for determining BES facilities may require regulatory approval. We understand the need to move the WECC process forward quickly and to avoid regulatory approvals. Therefore, we are willing to support appropriate alternatives to Proposal 2 that produces substantially the same result as Proposal 2. An acceptable alternative could include the features:

- Leave the “bright line” defining the BES as elements at or above 100 kV but create a table of eligibility characteristics of an element, facility or facilities above 100 kV, which would be excluded from the BES. One of the characteristics would be that element is reasonably demonstrated not to have a material impact on BES reliability.**
- WECC would conduct a fair and open process for determining and updating these characteristics from time to time,**
- Either the host Balancing Authority or WECC would produce studies needed to reasonably demonstrate material impact (a Material Impact Assessment) at the request of a party.**
- Determinations to exclude or not exclude an element from the BES based on a Material Impact Assessment would be subject to challenged by affected parties.**
- Elements above a nominal 231 kV would be included in the BES in all cases.**

Support for a proposal conforming to these features would be contingent on the following events: 1) the WECC legal staff determines and provides a supporting legal opinion that the proposal is in conflict with NERC directives and exceeds reasonable deference as provided by the reliability legislation, 2) that opinion is examined at an open WECC board meeting, and 3) the board concurs with the staff's legal opinion.

2. Favoring the definitions and recommendations on radial facilities

We support the inclusion of the additional defined terms of Radial Transmission Facility and Distribution Network in Section 2b. These additional definitions better delineate the status of facilities, and provide additional clarity that is beneficial from all perspectives.

In general, we do not support a blanket voltage level for inclusion in the BES. We believe the concepts discussed in Section 2ciii (default voltage levels for inclusion, and the operation of radial facilities that can be operated as part of a loop) provide additional clarity, and along with a clear Material Impact Assessment provide a fair and unequivocal method for classifying facilities rather than an arbitrary voltage level.

The existence of small generators on a radial line should not in itself result in the inclusion of the facility in the BES. With the new Renewable Portfolio Standards, solar and small-distributed generation projects will be proliferating; this could potentially cause the inclusion of numerous radial-facilities that under any other criteria would not be included in the BES. A better, and more reasonable, criteria for inclusion would be the criteria used for registration as a Generation Owner (25 MW for a single unit, or 75 for multiple units).

3. Aggregate effects and requiring justification of impact

Aggregate effect is a difficult issue to resolve. Some entities have used the aggregate effect standard to justify registering small entities to meet data needs. From a practical perspective, most DPs and LSEs have contractual agreements with their host Balancing Area that require data necessary for planning and compliance to be supplied. Requiring registration purely to obtain data is not necessary or reasonable. If necessary, we support stronger contractual relationships with the BAs as a means of obtaining data necessary for reliable system planning and operations.

We support the requirement of a Material Impact Assessment before “bulk” registering or including groups of facilities. We also support the concept that an entity should not be registered unless the impact can ONLY be mitigated by registration.

4. Support the Material Impacts Assessment, even though not all the details are clear at this point.

We support the concept of a Material Impact Assessment as a means for ultimately determining inclusion or exclusion of facilities/elements in the BES. What is unclear to us is whether the BESDTF is supporting three different MIAs for different circumstances, or whether the three methods are to be winnowed down to one method.

We are against the use of the TPL standard performance as the method for determining material impact. The use of the TPL requirements is not a reasonable or consistent method for determining inclusion, and could bounce a facility in or out from year-to-year.

We support the method using Table 2 requirements as the best path, with some modifications. Loss of load in itself should be bounded by a magnitude limits (300 MW from EOP-004). If the load loss, even if on an adjacent utility is small, that should not result in inclusion unless the total load loss exceeds a threshold that could actually have an effect on the stability and operation of the BES.

We do have one caveat for the use of a MIA. This could cause a potential problem for smaller utilities without sufficient modeling ability. There should be an option to request WECC or their host BA to assist with the determination, or use of a vetted third party vendor, who would then need access to the data necessary to perform the study. If a party requires WECC assistance, WECC could charge the utility requesting the study for the cost of the study, though clearly there is value to WECC as well in consistently and accurately delineating facilities for inclusion in the BES.

In regards to the study itself, no single model should be required for the study, but the base data and output format and results should be specific, so it would not require additional interpretation to determine consistency with other models.

5. Support the BESDTF utilization of NERC's deference to create a BES definition.

NERC allows Regional Entities (WECC) to “exclude an organization that meets the [criteria described in the NERC Statement of Compliance Registry Criteria] as a candidate for registration if it believes and can reasonably demonstrate to NERC that the bulk power system owner, operator, or user does not have a material impact on the reliability of the bulk power system”. This statement is fundamental to WECC creating and implementing a BES definition that is meaningful and useful for the Western Interconnect. The proposal put forth by the BESDTF creates a system with the proper checks and balances of requiring Material Impact Assessments at the appropriate boundaries that may be uncertain. We applaud the efforts of the Work Group, and urge the Board of Directors to adopt the proposal.

6. Clarify the definitions between the BPS and the BES.

There is still confusion regarding the correlation of the definitions of the “Bulk Electric System” and the FERC open docket on the “Bulk Power System” as noted in proposal. Despite the inherent uncertainty the FERC effort creates for the WECC process, we strongly support the WECC effort to clarify the BES definition, and believe that the proposed structure will provide input and insight to FERC on their parallel effort. We recommend that the WECC declare that the BES is equal to the BPS.

7. Address the exclusion of generators in the definition of the BES.

We support the exclusion of generation interconnection facilities as set forth by the GO/TO team and changing applicable standards to allow registration as a GO only. As to inclusion of generation facilities, we support a unit-size threshold for registration as opposed to a blanket voltage level. Some generating units connected to radial lines may be connected at voltages above 100kV, but have no impact on the BES and should not be included in the BES. The Inclusion Provisions or the criteria in Table 2 criteria should be used to determine whether a unit is part of the BES.

We do not, however, support holding up the BES definition finalization to wait for the standards to be revised. While we support the concept, waiting for standard revision will effectively negate the work group's efforts.

Question and Answers, Proposal 2

1. While NERC's "base" BES definition would, arguably, presume that all facilities above 100 kV are included in the BES, the BESDTF has proposed that (1) all facilities operated at voltage above 200 kV, except for generators and generator interconnection facilities, are presumed to be included in the BES; (2) that facilities operated at voltages between 100 kV and 199 kV, except for generators and generator interconnection facilities, are presumed to be included in the BES unless (1) they do not serve certain functions and (2) the owner has demonstrated that the facility has no material impact on reliability, and (3) facilities operated at voltages below 100 kV are presumed to not be part of the BES.

Do you support this approach?

Could this approach gain regulatory approval? What would be needed for such a proposal to gain regulatory approval?

NERC's Registry Criteria allows each RRO (WECC in this case) to create rules (read BES definition) which make sense for that system or in WECC's case, the entire Western Interconnect. Thus, our approach to defining the BES for the WECC can be unique. We do not believe that a 'bright-line voltage' criterion works in the WECC. We believe that allowing a Material Impact Assessment to either include or exclude a facility, or element, provides for a more cost-effective implementation of the ERO Compliance Standards.

We do not believe that generation connected to a facility should automatically make that facility an element of the BES. We strongly oppose the inclusion of a facility into the BES just because there is generation connected to the facility. We believe the 'size' of the generator is important in considering whether a facility should be included in the BES in this context. We suggest that the criterion included in Table 1 - Inclusion Provisions or Table 2 – Elements of Material Impact Assessment be considered in this determination.

We also believe that the BESDTF's definition of the BES should more clearly articulate how the radial exclusion fits in. For example, a radial 115kV line serving only load should be excluded from the BES on that basis alone with no need to further demonstrate the lack of impact.

We support the BESDTF proposal that moves the blanket inclusion level to 199kV, the Table 1 criteria for inclusion, and using a Material Impact Assessment to ultimately decide inclusion or exclusion. This approach will provide a more refined assessment of the inclusion of facilities and should be less over-inclusive while capturing the facilities important to BES reliability.

Concerns have been expressed that Proposal 2's method for determining BES facilities may require regulatory approval. As outlined in our introductory comments, if it is the WECC's legal staff's determination that this proposal would require regulatory approval resulting in significant delays, we would be open to approaching the issue from the opposite direction if the results are substantially the same. In, other words, we would be supportive of leaving the "bright line" at 100 kV and creating a table of eligibility characteristics to exclude facilities above 100 kV, with a fair and open process for determining and updating these characteristics, and supported by a Material Impact Assessment as the means for exclusion of an element, facility, or set of facilities that has no impact on the BES. Using this "test", we would recommend that for practical purposes, anything above a nominal 231 kV would be included under any circumstance. With this approach, there also needs to be a means for small entities to obtain support either from their BA or WECC to perform the required MIA so all entities can effectively exercise these provisions,

2. Is the list of inclusion provisions in Table 1 sufficient? Does it include provisions that are unnecessary? Are there missing provisions?

We believe the criteria provided in Table 1 is sufficient, though as with all things, it may need to evolve over time to address new issues that may arise.

3. The BESDTF proposal includes the premise that the "Material Impact Assessment" can "trump" the initial presumption, based on voltage and function, that an element is or is not part of the BES. Do you support this approach? Why or why not? Should a material impact assessment option be included to "trump" the exclusion of generator interconnection facilities from the BES as well?

We are supportive of the MIA "trumping" the initial presumption of inclusion or exclusion based on 'bright-line' voltage test or the functional test. The entire exercise of deciding which facilities/elements to include in the BES should be based on whether that facility/ element has the potential to impact system reliability, and if a study shows it does or does not have an impact should be the deciding factor. The electric systems in the WECC are too varied and complex for any absolute 'bright-line' voltage test, or rule-of-thumb test to be absolute. Thus, it is important to have inclusive and exclusive provisions to meet the varied conditions that exist.

4. The BESDTF proposes that distribution networks – facilities connected to the BES at more than one point but are intended to serve local load, not transfer bulk energy – be excluded from the BES. The intent is to encourage non-radial service to customer loads where doing so will improve reliability. To do otherwise would penalize the use of looped or networked transmission lines in the underlying system and, through the law of unintended consequences, could promote the use of radial lines for load service.

What criteria would be used to determine when a distribution network serves only

local load and is not intended to provide flow-through capability? The Northeast Power Coordinating Council recently proposed using a transfer distribution factor test to determine qualification for inclusion into the BES. A description can be found in their recent compliance filing with the FERC (see Docket No. RC09-3-000). Do you support the use of transfer distribution factors to determine which non-radial interconnected facilities are distribution networks and not part of the BES?

We believe a statement from the Registered Entity (owner of the distribution network) should be sufficient. We would also support a “flow through” test, similar to what has been proposed in the NPCC to demonstrate that a line or set of lines are not operated and not intended to provide a transfer path.

5. Should the presence of any generation on a radial facility or distribution network warrant that such facility be included in the BES? If not, what criteria should be used to determine how much generation can be connected to a radial facility or distribution network without that facility being part of the BES?

No, we do not believe that generation of any size on a radial network should trigger inclusion in the BES. We fully expect that the legislated Renewable Portfolio Standards that distributed generation will become much more commonplace over time, and a blanket inclusion would add facilities that have no reliability impact on the BES. We would support using the GO/ GOP registration criteria MW and kV as an appropriate threshold to include a line with generation that would otherwise be excluded from the BES.

For clarity, we suggest that the BESDTF differentiate “market” from “physical” for determinations relating to “load served by the generation”. If the generation is physically utilized within a radially served area despite the ultimate market destination, the physical should be the determining factor.

6. The BESDTF has adopted the approach set forth by NERC’s GO-TO team in excluding generator interconnection facilities from the BES, but requiring that GO/GOPs comply with applicable standards regarding those facilities as GO/GOPs, not TO/TOPs, by changing the applicability of certain standards and requirements to GO/GOPs.

Do you support this approach? If so, why? If not, why not?

We support this concept in general. We believe it will focus an entity’s limited staff resources and more effectively enhance reliability to move the appropriate standards to GO/GOP rather than requiring full registration as a TO/TOP. However, we do not wish the BESDTF’s proposed definition for the BES to be delayed due to modifications required to Standards to accommodate the requested changes by the GO-TO team.

7. The BESDTF has proposed three alternatives for a Material Impact Assessment. Which do you support, and why? Which do you oppose, and why? Please note that the studies being performed by the WECC are not yet complete; hence no methodology is available for your review and consideration. However the intent is to develop a test that can be used to differentiate between BES and non-BES elements.

Is the list of material impact assessment criteria in Table 2 sufficient? What's missing? What's there that should not be?

What rules/criteria should govern how the Material Impact Assessment studies are performed? How often, or under what conditions, should these studies be refreshed?

Should WECC staff be involved in the Material Impact Assessment studies? If so, how? If staff is involved, should the costs of staff's involvement be funded solely by the affected party?

What study results would demonstrate a "material impact" on BES reliability? (Please be specific: e.g., a transient voltage dip to 0.8 per unit, causing another element to exceed its emergency rating, etc.)

We support the use of a Material Impacts Assessment to ultimately determine whether a facility/element should or should not be in the BES. We support this provision except for the phrase "could be excluded" at the end of the purpose statement. We urge parity by revising the last part of the above to read; "but are determined to not have a material impact on the reliability of the BES, should be excluded from the BES". We believe that the Table 2 assessment method shows the most promise, however, loss of load in itself should be bounded by a magnitude limits. If the load loss, even if on an adjacent utility is small (less than 300 MW), that should not result in inclusion unless the total load loss exceeds a threshold that could actually have an effect on the BES stability and operation. We believe the Connecting Transformer exclusion (BESDTF2, 2.c.iv) should be expanded to also explicitly apply to that owner's applicable high side conductor, switching, and protection relays.

The use of the Transmission Planning Standard requirement is not a reasonable or consistent method for determining inclusion, and could bounce a facility in or out from year to year. It is unclear at this point what the BESDTF proposed and WECC might produce as a result of System Performance Investigation, so we need further information to comment on that potential method.

The use of an MIA presents potential problems for smaller utilities without sufficient modeling ability. There should be an option to request WECC to assist with the determination, or to use a third party vendor, who would then need access to the data necessary to perform the study. If a party requires WECC assistance, WECC could charge the utility requesting the study, though clearly there is value to WECC as well in consistently and accurately delineating facilities for inclusion in the BES. The process should also provide reasonable opportunity for the affected entity to examine, rebut, and(or) provide its own MIA before WECC imposes any requirements related to that determination on the entity

In regards to the study itself, no single model should be required to be used for the study, but the base data and output format and results should be specific and details so it does not require additional interpretation to determine consistency with other models. As a final comment, the proposal uses the phrases “Material Impact Assessment”, “Material Impact Studies”, and “Material Impact Assessment Studies”. If these are interchangeable we suggest using a single phrase.

8. Apart from the proposed criteria 1.a in Table 2, the BESDTF’s proposal does not contain a specific “loss of load” criteria (e.g., the loss of some amount of load due to the loss of a facility would warrant including that element in the BES. Should there such a “loss of load” criteria? If so, what amount of load should be used?

We do not believe a ‘loss of load’ criteria should be included. But if it is we suggest that the common threshold of 300 MW be used.

9. Please comment on the TIER methodology. Is that method suited for classifying which network elements belong to the BES? If not, why not? How would the TIER methodology be used to determine which elements are BES elements and which are not? What TIER value, or place on the ranking curve, would be the cutoff between BES elements and non-BES elements?

The TIER method has some positive aspects in its treatment of radial load and the simplicity of the concept and calculation. On the other hand, the DC flow and thermal emphasis it does not really address stability limited elements that exist in the WECC. In the WECC region there are problems that TIER can’t correctly model. The model is based on pure economic dispatch, which isn’t always true in the non-RTO west, it can’t model non-dispatchable generation such as wind and hydro subject to flood control or fisheries constraints, and ignores the DC transmission system, which moved over 5,000 MW in the WECC region. For these reasons, we do not believe the Tier method is an adequate tool to evaluate the WECC.

We assume using TIER would require the calculation of a cutoff point where elements above the threshold would be in, and those below would be out. This in itself could be a difficult exercise and questions of how often to do the study, and what to do with elements that shift between studies is problematic. For these reasons, we are supportive of the concept of a true Material Impact Assessment using a power flow model to correctly capture stability limited elements and other effects that would not be apparent in a TIER study.

10. Please comment on NPCC's proposed BES definition. Do you support it, and why? Do you oppose it, and why?

Do you support the use of transfer distribution factors (TDFs) to determine which networked (i.e., non-radial) facilities should not be part of the BES? Is NPCC's proposed 1% TDF threshold appropriate? If not, what is an appropriate threshold, and why?

The NPCC method, while adding some interesting elements, still uses a fixed voltage threshold for most transmission element determinations. The additional criteria, however, are potentially useful for consideration. We would support the concept that for inclusion that BOTH voltages on a step up transformer would be above 100 kV, the radial exclusion criteria, and the concept of the Transfer Distribution Factors. On the second part of the question, 1% seems an appropriate cutoff point, but lacking the engineering study detail behind it, it's hard to tell if that is the right number, or if that would be the correct point if the method were applied to the WECC. We support the use of transmission distribution factors as a tool in determining effect on the BES

11. The BESDTF proposal clarifies that the possibility that a radial facility might be paralleled the BES through a normally open switch does not automatically include that facility in the BES if the circuit is normally operated as radial and is only paralleled to the BES for a short time.

Do you support this clarification? Why or why not?

Yes. This is consistent with the recent NERC informal interpretation. It also makes sense since load transfers result in a very tiny percentage of time actually spent in parallel. If such a switch caused elements to become BES, the entity is effectively being punished by offering the higher level of service to their customers that the second path provides.

Question 12:

12. The BESDTF proposes that, rather than using the "aggregate effect" note in NERC's Statement of Compliance Registry Criteria to require the owners of certain facilities to include those facilities in the BES so as to gain access to data, the standards that require parties to provide that data be modified to apply more precisely to the parties from whom the data is required – a similar approach proposed by NERC's GO-TO team.

Do you support this approach? Why or why not?

Is there a way to deal with the potential of a coordinated cyber-security attack on small generating units without including those small generating units in the BES?

Aggregate effect is a difficult issue. The proposed method to change standards to address potential data needs does not work in the situation where a utility or facility could potentially be “delisted” from registration or the BES. From a practical perspective, most DPs and LSEs have contractual agreements with their host Balancing Area that require data necessary for planning and compliance to be supplied. Requiring registration purely to obtain data is not necessary or reasonable, and is best addressed through the BA. We support the requirement of a Material Impact Assessment before “bulk” registering or including groups of facilities. We also support the concept that an entity should not be registered unless the impact can ONLY be mitigated by registration.

We suggest that the BESDTF add “aggregate effect” to its “additional proposed defined terms and this definition should substantially be:

If an entity is part of a class of entities excluded based on the registration criteria as individually being unlikely to have a material impact on the reliability of the bulk power system, but that in aggregate have been reasonably demonstrated by a reliability proponent to have such an impact and the proponent reasonably demonstrates that the potential such impact may be only mitigated by registering the entity for applicable standards and requirements then the entity is a contributor to “aggregate effect” and should be accordingly registered.

The issue surrounding a coordinated cyber attack on a series of low output units is of such low probability that it does not warrant an alternative criterion for including facilities in the BES.

13. Do you support the proposal that transformers that interconnect facilities excluded from the BES shall also be excluded from the BES? Why or why not?

Yes. They are already excluded from “transmission” per the NERC definition since these transformers are the “points at which it is transformed for delivery to customers or is delivered to other electric systems.” They certainly do not count as generation, so there is no other way under the NERC definition of BES that they could be included. The proposed PRC-023 is consistent with this definition. The Project 2009-17 interpretation of PRC-005 is also consistent with this definition. The effect on the BES from the failure of one of these transformers is to free up capacity. The relaying on these transformers is intended to protect the transformer from damage due to through faults, and to minimize transformer damage from internal faults; not to protect upstream BES facilities. In many cases, remote BES protection will not even see these faults due to the transformer impedance.