Note – This form is to comment on version 1 of the Balance Resources and Demand Standard.

The latest version of this Standard (BAL_RES_&_DEMND_05_01) is posted on the Standards web site at: http://www.nerc.com/~filez/standards/Balance-Resources-Demand.html

E-mail this form between July 1– August 29, 2003, to: sarcomm@nerc.com with "Comments" in the subject line.

If you have any questions about this Standards Draft Comment Form, please contact the Director of Standards – Tim Gallagher at 609-452-8060.

Background

The Balance Resources and Demand Standards Drafting Team (team) put together a document called, "Introduction to the Balance Resources and Demand Standard" to explain the approach they took in developing the requirements and measures in the first draft of this standard. Several of the questions on this comment form ask for feedback on that rationale.

The team also drafted three technical references:

- Procedure for Developing Interconnection Frequency Limits
- Procedure for Developing Balancing Authority Area Control Error Limits
- Procedure for Developing Balancing Authority Frequency Bias

These draft procedures identify how the limits and frequency bias used in this standard could be developed. Some of the questions in this comment form ask you for feedback on the rationale for using these limits to help in real-time frequency monitoring. Other questions ask you for feedback on the methodology for the calculations.

Your feedback is very important in guiding the team's revisions to this draft standard, and to the draft procedures used to support this standard. We tried to sort the questions so that feedback on the standard is collected separately from feedback on the procedures. While we would like as many people as possible to answer all the questions on this form, we recognize that not everyone will want to analyze the details of the formulas.

The SDT is not seeking feedback on the appropriateness of the compliance monitoring process or the levels of non-compliance on the requirements in this standard during this posting period. The next posting of this standard will include specific questions asking for guidance on the appropriateness of the compliance elements of the standard.

The SDT thanks you for your active participation in this process!

STD Commenter Information (For Individual Commenters)	
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Key to Industry Segment #'s:

1 – Trans. Owners
2 – RTO's, ISO's, RRC's
3 – LSE's
4 – TDU's
5 - Generators
6 - Brokers, Aggregators, and Marketers
7 - Large Electricity End Users
8 - Small Electricity Users
9 - Federal, State, and Provincial Regulatory or other Govt. Entities

STD Commenter Information (For Groups Submitting Group Comments)	
Name of Group:	**Group Chair:** Chair Phone: Chair Email:

List of Group Participants that Support These Comments:

Name	Company	Industry Segment #

Comments on Introduction to the Balance Resources and Demand Standard

1. Do you agree with the rationale for moving from the existing two, stand-alone periods (1-minute and 10-minutes) for CPS to an integrated 1-minute and 60-minute average-based frequency profile for CPM? (Reference the "Introduction to the Balance Resources and Demand Standard")

   ☐ Yes ☒ No

   Comments; This methodology proposed in the standard does not sufficiently address unscheduled net flows caused by generation/load mismatches in a control area. Preliminary studies indicate compliance with the CPS60 metric will be difficult and it is felt that the 60 minute average is unnecessary to properly control the system.

2. This standard introduced a set of limits for the RA to use in controlling frequency and a set of limits for monitoring the BA's ACE. Do you agree with the principle of using these limits as an aid in monitoring and controlling interconnection frequency?

   Relay Limits
   ☒ Agree with using the limits in this standard
   ☐ Disagree with using the limits in this standard

   Abnormal Limits
   ☐ Agree with using the limits in this standard
   ☒ Disagree with using the limits in this standard

   Trigger Limits
   ☐ Agree with using the limits in this standard
   ☒ Disagree with using the limits in this standard

   Balancing Authority Area Control Error Limits
   ☐ Agree with using the limits in this standard
   ☒ Disagree with using the limits in this standard

   Comments about using any of these limits in this standard;
   NPCC supports developing limits linked to reliability concerns and the Relay Limits are a suitable starting point. The Abnormal Limits and Trigger Limits seem to be too complex in their present form and NPCC prefers to have limits that are simpler. NPCC feels that identification of ACE limits based so heavily on frequency do not reflect whether an area has an adequate balance of generation and load. NPCC seeks a simpler MW limit for the BA's ACE. This simpler MW limit would be conducive to proper control for asynchronous control areas.

3. The following terms are defined at the beginning of the draft standard. Please let us know if you agree with the proposed definitions for each of these terms:

   ACE Normal Operating Zone
   ☐ Agree ☒ Disagree

   Balancing Authority ACE Limits
   ☐ Agree ☒ Disagree

   Frequency Abnormal Limits
   ☐ Agree ☒ Disagree

   Frequency Abnormal Operating Zone
   ☐ Agree ☒ Disagree

   Frequency Deviation
   ☒ Agree ☐ Disagree

Frequency Error
☒ Agree ☐ Disagree

Frequency Event Trigger Time (t0)
☐ Agree ☒ Disagree

Frequency Limit Violation Time (TV)
☐ Agree ☒ Disagree

Frequency Normal Operating Zone
☐ Agree ☒ Disagree

Frequency Relay Limits
☒ Agree ☐ Disagree

Frequency Event End Time (t1)
☐ Agree ☒ Disagree

Frequency Trigger Limit
☐ Agree ☒ Disagree

Frequency Trigger Limit Operating Zone
☐ Agree ☒ Disagree

Response Time (TR)
☒ Agree ☐ Disagree

Comments on any the definitions: NPCC feels that portions of the method as proposed are excessively complex and as such does not agree with the stated definitions pertaining to the methodology in the proposed standard. See attached NPCC Paper outlining alternatives.

Requirement 301 – Balance Resources and Demand

4. Do you agree with the requirement?
☒ Yes ☐ No

5. Do you agree with the measures?
☐ Yes ☒ No

Comments about Requirement 301 ; NPCC disagrees with focusing on CPS-1 methodology, exclusive use of MW-Hz metrics, excessive complexity, redundancy between DEM and AOM, and unscheduled net flows caused by mismatches of load and generation.

DEM - As proposed, Discrete Events Metric is intended to capture extreme events that indicate a pattern of putting the interconnection at risk and may not be captured by Abnormal Operations Metric, Control Performance Measure-1 or Control Performance Measure-60. The team was evenly divided on whether this measure is within the scope of the approved SAR.

The team developed two different versions of the DEM measure – Version A and Version B.

- Discrete Event Metric Proposal A uses a 60-minute average of performance. With this version, you collect data once every hour and calculate a monthly compliance factor by producing the average of all the hourly data points collected.
- Discrete Event Metric Proposal B uses an average of 60 calculations of one-minute average performance. With this version, you collect data every minute and calculate a

monthly compliance factor by producing the average of all the one-minute data points collected.

The one-minute sample highlights the variability. The sixty-minute sample highlights the trend.

6. Which version of Requirement 301's DEM Measure do you prefer?

   ☐ Version A where data is collected once each hour

   ☒ Version B where data is collected once each minute

   Comments; Given a choice, Version B is better. NPCC feels that a 60 minute interval to average performance is not a good indicator of system performance as the average over that long a time period will tend to dilute any adverse performance. This is not an acceptable replacement for DCS. In fact, the metric would result in a positive score when there is poor recovery and the frequency remains high.

Requirement 302 – Frequency and ACE

There are two different versions of Requirement 302 – Version C and Version D.

Version C's requirement is based on the following assumption:

- The RA has ultimate responsibility for controlling frequency, and penalties should be assessed if frequency isn't controlled and the BAs within the RA area are not:
  - All supporting frequency or
  - Supporting frequency in the net

With Version C, the RA is penalized if there is a frequency violation and its BAs contribute to that violation. (With this version, the RA is penalized even if it follows procedures.)

Version D's requirement is based on the following assumption:

- The RA is responsible for following established procedures, and penalties should be assessed against the RA only if the RA doesn't follow these established procedures.

With Version D, the RA is penalized if there is a frequency violation and the RA doesn't direct its BAs to take action to control frequency within a defined time frame.

7. Which version of Requirement 302 do you prefer?

   ☐ Version C

   ☒ Version D

   Comments

Requirement 302 – Frequency and Area Control Error Version C

8. Do you agree with the requirement?

   ☐ Yes ☒ No

9. Do you agree with the measures?

   ☐ Yes ☒ No

Comments about Requirement 302 – Version C
NPCC agrees with the requirements for frequency, however, large ACE values are not addressed.

NPCC seeks simplicity with regard to the frequency limits.

We disagree with the use of the Area Control Error normal operating zone.

Requirement 303 – Frequency and Area Control Error Version D

10. Do you agree with the requirement?

    ☐ Yes ☒ No

11. Do you agree with the measures?

    ☐ Yes ☒ No

Comments about Requirement 302 – Version D Refer to our comments on Version C

Requirement 304 – Reliability Authority Directives

12. Do you agree with the requirement?

    ☒ Yes ☐ No

13. Do you agree with the measures?

☐Yes ☒ No

Comments about Requirement 304 :

It is not clear what documentation is required, and it seems that some of the information may be burdensome to collect and archive (e.g., voice recordings). The measures do not seem to match with the compliance levels. The stated compliance requirements are ambiguous and different answers can be computed based as a result of the ambiguity.

Other Issues with Standard

There are at least two different approaches to the compliance monitoring process. One approach leaves the details of the frequency of the compliance monitoring somewhat open-ended. Another approach provides more specific limits on the frequency of compliance monitoring.

Version A

The compliance monitor may also use periodic reviews (on site, per a schedule), with spot reviews and triggered investigations to assess performance.

Version B:

The compliance monitor may also use scheduled on-site reviews every three years, and investigations upon complaint, to assess performance.

14. Which do you prefer for future versions of this standard?

☒ Version A

☐ Version B

Comments

The Abnormal Operations Metric (AOM), as proposed, includes the consideration of a 'diversity factor.' A method of calculating this diversity factor is not clearly defined and needs additional research. The diversity factor tries to give each BA a wider acceptable operating margin as a benefit of interconnected operations.

15. Which do you prefer?

☐ Use a frequency-dependent equation without a diversity factor

☐ Use a diversity factor

☒ Other-please specify

In the proposal the metric is structured to assume random ACE values and attempts to give credit for diversity beyond randomness, which is inappropriate and excessive. In the NPCC alternative metrics, it is stated that an assumption of coincidence should be used as a starting point and then a credit is provided for diversity beyond that. See the attachment that supplements our comment form(s).

Some team members think that AOM and DEM overlap or are redundant measures.

16. If you think there is sufficient redundancy, and you think one of the measures should be eliminated, which one do you think should be eliminated?

☐ No Redundancy with AOM and DEM

☒ AOM and DEM are redundant – eliminate the following:

- ☐ Eliminate AOM
- ☒ Eliminate DEM
- ☐ Redundant but keep both anyway

Comments; See NPCC proposal for alternative metrics.

17. List any Regional or Interconnection Differences for this standard.

18. Provide any other comments on this standard.

These metrics as they appear in the final Balancing Resource and Demand Standard must work equally well for asynchronous connected areas.

From a global perspective it might be a prudent action to place the standard's development in a moratorium until the investigation into the blackout cause is completed and determinations have

been made. There could be new Reliability issues identified during the coming weeks that need to be captured in the developing standard and need to be incorporated into the nextdraft.

NPCC is adamantly opposed to monetary sanctions and feels letters of increasing severity are a more effective compliance tool for ensuring adherence to standards.

NPCC also feels there is a lack of coordination between the standard drafting teams and has noted instances where one team felt an issue was addressed in another standard to later learn it was not. As an example, with respect to the Operate Within Limits standard, transmission overloads that are caused by poor control are not covered by this standard unless they reach a high level IROL We would suggest that there be technical oversight as we go forward with these processes to ensure there are no “gaps” or critical reliability issues that are not addressed in the resultant standards.

Procedures for Developing Interconnection Frequency Limits, BAALs, and Frequency Bias

19. Do you agree with the method of calculating these limits as described in the Procedure for Determining Interconnection Frequency Limits?

    Relay Limits

    ☒Agree with the calculations for these limits

    ☐Disagree with the calculations for these limits

    Comments about the calculations for these limits

    Abnormal Limits

    ☐Agree with the calculations for these limits

    ☒Disagree with the calculations for these limits

    Comments about the calculations for these limits

    Trigger Limits

    ☐Agree with the calculations for these limits

    ☒Disagree with the calculations for these limits

    Comments about the calculations for these limits

20. Do you agree with the method of calculating these limits as described in the Procedure for Determining Balancing Authority Area Control Error Limits?
    Balancing Authority Area Control Error Limits

    ☐Agree with the calculations for these limits

    ☒Disagree with the calculations for these limits

    Comments about the calculations for these limits See NPCC Alternative-

21. Do you agree with the Procedure for Determining Balancing Authority Frequency Bias?

    ☒Agree

    ☐Disagree

    Comments

22. The Procedure for Determining Interconnection Frequency Limits used in this standard was drafted with consideration of the highest frequency operating setpoint for each interconnection as published in Operating Policy 1 Appendix 1D. The Procedure for Developing Interconnection Frequency Limits was drafted assuming that time error correction will not be included in any standard developed by NERC, but a similar frequency correction procedure will be developed by NAESB. At this point, it isn't clear if there will be a NAESB Business Practice Standard for time error correction.

    Should the team adjust the Procedure for Developing Interconnection Frequency Limits to eliminate the application of a frequency operating setpoint as published in Operating Policy 1 Appendix 1D, or should the team assume that NAESB will develop a business practice standard that will mandate time error correction? The result of eliminating the frequency operating setpoint would be to widen the frequency normal operating zone.

    ☒Keep the reference to interconnection frequency operating setpoints in the Procedure for Determining Interconnection Frequency Limits

    ☐Eliminate the reference to interconnection frequency operating setpoints in the Procedure for Determining Interconnection Frequency Limits

    Comments