Comment Form

Project 2010-14.1 Balancing Authority Reliability-based Control

BAL-001-1 – Real Power Balancing Control Performance

Please do not use this form to submit comments on the proposed revisions to BAL-001-1 Real Power Balancing Control Performance. Comments must be submitted on the electronic comment form by 8 p.m. July 3, 2012. If you have questions please contact Darrel Richardson (email) or by telephone at (609) 613-1848.

BAL-001-1 Real Power Balancing Control Performance

Background Information:
Control Performance Standard 1 (CPS1) has been retained, and details for calculating CPS1 are included in Attachment 1. Calculation of Reporting Area Control Error (Reporting ACE) has been clarified, and details for calculating Reporting ACE are also included in Attachment 1. The Balancing Authority ACE Limit (BAAL), an interconnection frequency and Balancing Authority ACE measurement, is included in this standard as Requirement 2 and replaces Control Performance Standard 2 (CPS2). Details for the calculation of BAAL are included in Attachment 2.

CPS2 was not designed to address Interconnection frequency. Currently, it measures the ability of a Balancing Authority to maintain its average ACE within a fixed limit of plus or minus a MW value called L10. To be compliant, a Balancing Authority must demonstrate its average ACE value during a consecutive ten minute period was within the L10 bound 90 percent of all 10 minute periods over a one month period. While this standard does require the Balancing Authority to correct its ACE to not exceed specific bounds, it fails to recognize Interconnection frequency.

BAAL is defined by two equations, BAAL low and BAAL high. BAAL low is for Interconnection frequency values less than 60 hertz and BAAL high is for Interconnection frequency values greater than 60 hertz. BAAL values for each Balancing Authority are dynamic and change as Interconnection frequency changes. For example, as Interconnection frequency moves from 60 hertz, the ACE limit for each Balancing Authority becomes more restrictive. The BAAL provides each Balancing Authority a dynamic ACE limit that is a function of Interconnection frequency.

As a proof of concept for the proposed BAAL standard, a BAAL field trial was approved by the NERC Standards Committee and the Operating Committee. Currently there are 13 Balancing Authorities participating in the Eastern Interconnection, 26 Balancing Authorities participating in the Western Interconnection, the ERCOT Balancing Authority, and Quebec. Reliability Coordinators for all interconnections continue to monitor the performance of those participating Balancing Authorities and
provide information to support monthly analysis of the BAAL field trial. As of the end of September 2011, no reliability issues with the BAAL field trial have been identified by any Reliability Coordinator.

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. The BARC SDT has developed two new terms to be used with this standard.

Balancing Authority ACE Limit (BAAL):

The limit beyond which a Balancing Authority contributes more than its share of Interconnection frequency control reliability risk. This definition applies to a high limit (BAALHigh) and a low limit (BAALLow).

Reporting ACE:

The scan rate values of a Balancing Authority’s Area Control Error (ACE) measured in MW as defined in BAL-001 which includes the difference between the Balancing Authority’s actual interchange and its scheduled interchange plus its frequency bias obligation plus any known meter error.

Do you agree with the proposed definitions in this standard? If not, please explain in the comment area below.

☐ Yes
☐ No
Comments:

2. The SDT has modified the definition for the term Interconnection. The new definition is shown below in redline to show the changes proposed.

Interconnection:

When capitalized, any one of the four three major electric system networks in North America: Eastern, Western, Texas and QuebecERCOT.

Do you agree with this new definition for Interconnection? If not, please explain in the comment area below.

☐ Yes
☐ No
Comments:

3. The proposed Purpose Statement for the draft standard is:
To control Interconnection frequency within defined limits in support of interconnection frequency.

Do you agree with this purpose statement? If not, please explain in the comment area below.

☐ Yes
☐ No
Comments:

4. The BARC SDT has developed Requirement R1 to measure how well a Balancing Authority is able to control its generation and load management programs, as measured by its Area Control Error (ACE), to support its Interconnection’s frequency over a rolling one year period.

   R1. Each Balancing Authority shall operate such that the Balancing Authority’s Control Performance Standard 1 (CPS1), as calculated in Attachment 1, is greater than or equal to 100% for the applicable Interconnection in which it operates for each 12 month period, evaluated monthly, to support interconnection frequency.

   Do you agree with this Requirement? If not, please explain in the comment area below.

☐ Yes
☒ No
Comments:

5. The BARC SDT has developed Requirement R2 to enhance the reliability of each Interconnection by maintaining frequency within predefined limits under all conditions.

   R2. Each Balancing Authority shall operate such that its clock-minute average of Reporting ACE does not exceed for more than 30 consecutive clock-minutes its clock-minute Balancing Authority ACE Limit (BAAL), as calculated in Attachment 2, for the applicable Interconnection in which it operates to support interconnection frequency.

   Do you agree with this Requirement? If not, please explain in the comment area below.

☐ Yes
☒ No
Comments: As with BAL-013-1, should “clock-minutes” be replaced with “minutes”?

6. The BARC SDT has developed VRFs for the proposed Requirements within this standard. Do you agree that these VRFs are appropriately set? If not, please explain in the comment area below.

☐ Yes
☐ No
Comments:
7. The BARC SDT has developed Measures for the proposed Requirements within this standard. Do you agree with the proposed Measures in this standard? If not, please explain in the comment area.
   - Yes
   - No
   Comments:

8. The BARC SDT has developed VSLs for the proposed Requirements within this standard. Do you agree with these VSLs? If not, please explain in the comment area.
   - Yes
   - No
   Comments:

9. The BARC SDT has developed a document “BAL-001-1 Real Power Balancing Control Standard Background Document” which provides information behind the development of the standard. Do you agree that this new document provides sufficient clarity as to the development of the standard? If not, please explain in the comment area.
   - Yes
   - No
   Comments:

10. If you are aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement, or agreement please identify the conflict here.
    Comments:

11. Do you have any other comment on BAL-001-1, not expressed in the questions above, for the BARC SDT?
    Comments: Because the frequency model is simply using 3 times Epsilon 1 for trigger limits, it does not produce optimum results. The 3 times Epsilon 1 trigger limits are not calibrated to account for relay settings or frequency response. The 3 times Epsilon 1 approach has a “set it and forget it” characteristic. The alternative model would require periodic updating as relay limit settings change, the Interconnection’s frequency response changes, and the perceptions of the level of protection needed change. It also does not target a specified level of reliability.

    Concerns about transmission limits caused by dropping CPS 2 and the limitations in CPS 1 still haven’t been addressed.
For CPS 1 data submissions, the number of one minute samples in the month becomes a new requirement.

In Attachment 2 more complete guidance is needed for the treatment of a missing one minute sample when counting the time expired during a BAAL limit violation. Which of the following assumptions should be made about the missing sample: compliance, non-compliance, same state as the previous sample, same state as the next sample, or simple omission?