Unofficial Comment Form
Frequency Response (Project 2007-12)

Please DO NOT use this form to submit comments. Please use the electronic comment form to submit comments on the first formal posting for Project 2007-12—Frequency Response. The electronic comment form must be completed by December 8, 2011.

2007-12 Project Page

If you have questions please contact Darrel Richardson at darrel.richardson@nerc.net or 609.613.1848.

Background
Frequency Response, a measure of an Interconnection’s ability to stabilize frequency immediately following the sudden loss of generation or load, is a critical component to the reliable operation of the bulk power system, particularly during disturbances and restoration. There is evidence of continuing decline in Frequency Response over the past 10 years, but no confirmed reason for the apparent decline. The proposed standard requires entities to provide data so that Frequency Response in each of the Interconnections can be analyzed, and the reasons for the decline in Frequency Response can be identified. The standard would set a minimum Frequency Response obligation for each Balancing Authority, provide a uniform calculation of Frequency Response and Frequency Bias Settings that transition to values closer to natural Frequency Response, and encourage coordinated AGC operation.

The Drafting Team would like to receive industry comments on this standard.

You do not have to answer all questions. Enter all comments in Simple Text Format.

1. The SDT has made minor modifications to the proposed definitions to provide additional clarity. Do you agree that these modifications provide sufficient clarity? If not, please explain in the comment area.
   □ Yes
   ☒ No
   Comments: The FRM definition should not refer to FORM 1. Also, suggest the following wording for frequency bias setting: “A number, either fixed or variable, usually expressed in MW/0.1 Hz, included in a Balancing Authority’s Area Control Error equation to approximate the frequency response provided by the assets within the respective Balancing Authority’s area.”

2. The SDT has made minor modifications to the Requirements R1 through R4 to provide additional clarity. Do you agree that these modifications provide sufficient clarity to comply with the standard? If not, please explain in the comment area.
   □ Yes
   ☒ No
Comments: The requirements should not be directed at Balancing Authorities, as generators are the main supplier of “discretionary” frequency response. Requirement R1 refers to an attached form, which is not part of the standard and therefore not enforceable.

3. The 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.
   - Yes
   - No
   Comments:

4. The 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: The sampling interval needs to be tuned on a per Interconnection basis to support HQTE’s characteristics.

5. The 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: The violation severity levels for R1 are reasonable. The technical writing needs to be enhanced for clarity.

6. The SDT divided the previously posted “Attachment A – Background Document” into two documents to provide additional clarity. The first document “Attachment A – Supporting Document” which details the methods used to develop the events to be analyzed, the FRO, FRM and Frequency Bias Setting. Do you agree that the revised Attachment A – Supporting Document provides sufficient clarity on the methodologies to be used? If not, please explain in the comment area.
   - Yes
   - No
   Comments: The SDT has to first determine if the materials in the revised Attachment A & B are “Guideline” or Technical Background”, or are they “requirements”. If it is the former, then Requirement R1 should not mention Attachment A at all. If it is the latter, then the as written Attachment A is confusing as it describes the ERO’s process for supporting the Frequency Response Standard (FRS) (the method and criteria it uses to calculate the frequency bias settings and the FRM), and at the same time the BA’s obligations to support this process. The latter requirements should not be imbedded in an attachment, especially one that is supposed to provide the technical
background and guideline for another entity which is not held responsible for complying with the proposed method. An appendix is not regarded as a mandatory requirement.

Additionally, regarding BAL-003-1- Attachment A
1. Criterion 5 needs to be re-written for clarity.
2. Criterion 7 refers to “cleanest events”. A statement of what constitutes a “clean event” is needed to avoid possible controversy in the future.
3. The use of 59.6 Hz as the highest UFLS setting is flawed. It should either be 59.7 Hz as a deliberate choice to protect Florida interests, or it should be 59.5 Hz without concern for Florida’s unique settings.
4. In the last 2 sentences at the end of the section on Frequency Response Obligation, it refers to an Interconnection being able to offer “alternate FRO protection criteria”. The Interconnection should have been an integral part of establishing its obligation. It is stated that the “ERO will confirm” the “alternate FRO protection criteria”. Does this mean the ERO unconditionally approves it, or evaluates with a right of rejection? Please clarify.
5. In the formula for determining the Balancing Authority’s FRO allocation, installed capacity is used. Does the industry have a clear and consistent definition for installed capacity? Also, with greater wind energy development, the delivered capacity over longer time horizons will be substantially less than nameplate machine ratings. The background document refers to the use of peak generation instead of installed capacity. Which shall be used? Please clarify.
6. Recent studies have shown that the 18-52 second sampling interval does not work well for the Quebec Interconnection, in part due to the excellent and high level of response found in that Interconnection. The standard needs to be modified such that the sampling interval is that which works the best for each individual interconnection.
7. Attachment A needs to define the point A sampling interval.

7. The second document “BAL-003-1 Background Document” 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: Refer to the first comment in Question 6.

For the Frequency Response Standard Background Document –
1. Cite Attachment B in addition to Attachment A in the discussion of requirement R1.
2. The Balancing Authority allocation method specified in this document does not agree with that in Attachment A.
3. Drop the speculation on page 4 that most Balancing Authorities will be compliant. While it may be a commonly held belief by many that there is adequate frequency response right now, that assessment should be made after a targeted level of reliability has been defined and approved. The same comment applies on page 12.
4. On page 6, drop the inappropriate recommendation of getting frequency response through supplemental regulation. It is inappropriate to try to substitute a "minute plus" product that is deployed centrally by the Balancing Authority for a "sub-minute" product that is deployed automatically without any Balancing Authority action. When a pseudo-tie is used, changes in the ACE values due to supplemental regulation are unrelated to and not coordinated with the need to deploy frequency response. Not only should this approach not be offered as an alternative, but the FRSDT should actively conduct research to determine if supplemental regulation via a pseudo-tie should be deliberately REMOVED from any actual net interchange calculation that may include it. This comment also applies to the mentioning of supplemental regulation on page 11 as well.

5. On page 7, the reference to a 24 hour window on each side of the frequency bias setting implementation date is inconsistent with the wording of the standard. The standard states that any time within the designated date is acceptable.

6. On page 8, the inclusion of "for training purposes" as a reason to not operate in tie line bias control should be dropped. This training can be done in a training simulator. If it is determined that it should be supported, then the requirement needs to be reworded to allow it explicitly.

7. On page 14, the sentence: “This approach would only provide feedback for performance during that specific event and would not provide insight into the depth of response or other limitations” is difficult to understand. The paragraph would read better by simply deleting the sentence.

8. The SDT has developed a new document titled Attachment B – Process for Adjusting Bias Setting Floor. This document is intended to provide the methodology the ERO will use to reduce the minimum Frequency Bias Setting to become closer to natural Frequency Response. Do you agree that this document provides clear and concise instructions for the ERO to follow? If not, please explain in the comment area.
   
   □ Yes
   ✗ No
   
   Comments: Refer to the first comment in Question 6.

9. The SDT has provided an additional spreadsheet, FRS Form 2, to assist the Balancing Authority in providing the data needed to comply with the proposed standard. Do you agree that this spreadsheet is useful and the instructions are meaningful? If not, please explain in the comment area.
   
   ✗ Yes
   □ No
   
   Comments:

10. Please provide any other comments (that you have not already provided in response to the questions above) that you have on the draft standard BAL-003-1.
Comments: This standard as written does not place requirements on generators to provide frequency response.

There are four substantive problems:
- Using 59.6 Hz as an Eastern Interconnection UFLS instead of an actual value of either 59.5 Hz or 59.7 Hz.
- Using installed capacity in determining the Frequency Response Obligation.
- The sampling interval needs to be tuned on a per Interconnection basis to support HQTE’s characteristics.
- Do not advocate the use of supplemental regulation as a method of procuring frequency response.

It must be decided as to what the purpose of this standard is. If it is to respond to Order 693 then the standard misses the target of defining how often to run Frequency Response Surveys; it does not crisply define the “Interconnection” obligations.

If performance is the focus, then the issue of who is the default provider must be addressed. All BAs do not own the service providers. To create standards that apply to entities that are dependent on other functional entities to comply with a standard requirement is of great concern.

FRS Form 1 is listed as being an Associated Document. Will it be attached to the standard? The acronym FRS is used in the standard. FRS should be spelled out before its acronym is used. If FRS Form 1 will not be an appendix or an attachment to the document, then a link should be provided to it, or instructions given on how to find it.