

The logo for NERC, consisting of the letters "NERC" in a bold, black, sans-serif font. A horizontal blue bar is positioned below the letters.

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NORTH AMERICAN ELECTRIC
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The title of the document, "Frequency Response Standard Field Test Document", is centered in a blue, sans-serif font. The background features a large, semi-transparent image of a high-voltage electrical transmission tower on the right side and a map of North America on the left side, both in a light blue tone. Two horizontal orange bars are positioned above and below the title.

Frequency Response Standard Field Test Document

February 2011

to ensure
the reliability of the
bulk power system

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Need for a Field test

To expedite the delivery of a Frequency Response Standard¹ the draft BAL-003-1 is built upon the traditional annual Frequency Bias Setting calculation. This approach will enable using 2010 event data as a field test of specific aspects of the standard that have never been validated industry-wide. The proposed field test is intended to facilitate the delivery of a technically sound standard as soon as possible. The reasoning and approach for the components of the field test are described below. The field test will be modified if the draft standard changes on the basis of industry comments.

Frequency Bias Setting Floor

BAL-003-1 proposes to bring Frequency Bias Settings closer to Frequency Response. The drafting team proposes to reduce the minimum Frequency Bias Settings over a period of years. The drafting team proposes to establish a new minimum Frequency Bias Setting in 2011 (-0.8% of peak/0.1Hz, compared to the present -1% of peak/0.1Hz). The drafting team, NERC and the Resources Subcommittee will observe the impact on frequency and will implement a reversion plan as necessary.

Impact on other Balancing Standards

Changes in Frequency Bias Settings may have secondary impacts on calculated performance in other balancing standards. For example, with a reduced bias, L10 values tighten. The drafting team will evaluate the impact on other balancing standards.

Evaluating Other Options

The drafting team is evaluating other approaches to evaluate risk and performance obligation. This evaluation will be done in parallel during the field test period using the same underlying data and other data (such as ACE) that will be available without additional effort on the part of Balancing Authorities.

Confirm Calculation and Allocation Methodologies

While the general principles of Frequency Response are understood by Balancing Authorities, there has never been a common methodology for measuring and analyzing Frequency Response. The drafting team will evaluate the following aspects of the standard during the field test:

- The measurement methodology for Balancing Authorities with large amounts of non-conforming load. This is because the impact of non conforming load on NI_A for a small Balancing Authority can be an order of magnitude greater than the Balancing Authority's Frequency Response. The drafting team will solicit volunteer Balancing Authorities to test a

¹ On March 18, 2010, FERC Ordered NERC to deliver a performance-based Frequency Response Standard within 6 months. While FERC granted rehearing to provide time for a technical conference, the Order No 693 directives on BAL-003 must still be addressed. BAL-003-1 is one of the top priority standards for NERC in 2010.

secondary measure that may be superior for measuring Frequency Response in these situations.

- The validity of the measurement methodology for the full spectrum of Balancing Authorities (fixed vs. variable Frequency Bias Settings, large vs. small, load-only, generation-only).
- The variability of calculated Frequency Response (load's Frequency Response, governor response, plus Frequency Response from other technologies).
- Evaluate the event-selection criteria (differences in starting and settling frequency).