

May 13, 2014

**VIA ELECTRONIC FILING**

David Erickson  
President and Chief Executive Officer  
Alberta Electric System Operator  
2500, 330 - 5 Avenue SW  
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T2P 0L4

RE: *North American Electric Reliability Corporation*

Dear Mr. Erickson:

The North American Electric Reliability Corporation (“NERC”) hereby submits Notice of Filing of the North American Electric Reliability Corporation of Proposed Reliability Standard BAL-001-2 – Real Power Balancing Control Performance. NERC requests, to the extent necessary, a waiver of any applicable filing requirements with respect to this filing.

NERC understands the AESO may adopt the proposed reliability standards subject to Alberta legislation, principally as established in the *Transmission Regulation* (“the T Reg.”). Briefly, it is NERC’s understanding that the T Reg. requires the following with regard to the adoption in Alberta of a NERC Reliability Standard:

1. The AESO must consult with those market participants that it considers are likely to be directly affected.
2. The AESO must forward the proposed reliability standards to the Alberta Utilities Commission for review, along with the AESO’s recommendation that the Commission approve or reject them.
3. The Commission must follow the recommendation of the AESO that the Commission approve or reject the proposed reliability standards unless an interested person satisfies the Commission that the AESO’s recommendation is “technically deficient” or “not in the public interest.”

Further, NERC has been advised by the AESO that the AESO practice with respect to the adoption of a NERC Reliability Standard includes a review of the NERC Reliability Standard for applicability to Alberta legislation and electric industry practice. NERC has been advised that, while the objective is to adhere as closely as possible to the requirements of the NERC Reliability Standard, each

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NERC Reliability Standard approved in Alberta (called an “Alberta reliability standard”) generally varies from the similar and related NERC Reliability Standard.

NERC requests the AESO consider BAL-001-2, as described in the attached filing, for adoption in Alberta as an “Alberta reliability standard(s),” subject to the required procedures and legislation of Alberta.

Please contact the undersigned if you have any questions.

Respectfully submitted,

/s/ Holly A. Hawkins

Holly A. Hawkins

*Assistant General Counsel for*

*North American Electric Reliability*

*Corporation*

Enclosure

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**BEFORE THE  
ALBERTA ELECTRIC SYSTEM OPERATOR**

**NORTH AMERICAN ELECTRIC )  
RELIABILITY CORPORATION )**

**NOTICE OF FILING OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION  
OF RELIABILITY STANDARD  
BAL-001-2—REAL POWER BALANCING CONTROL PERFORMANCE**

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*Counsel for the North American Electric  
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May 13, 2014

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**BEFORE THE  
ALBERTA ELECTRIC SYSTEM OPERATOR**

**NORTH AMERICAN ELECTRIC )  
RELIABILITY CORPORATION )**

**NOTICE OF FILING OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION  
OF RELIABILITY STANDARD  
BAL-001-2—REAL POWER BALANCING CONTROL PERFORMANCE**

The North American Electric Reliability Corporation (“NERC”) hereby submits proposed Reliability Standard BAL-001-2—Real Power Balancing Control Performance.<sup>1</sup> Proposed Reliability Standard BAL-001-2, and associated definitions (“Regulation Reserve Sharing Group,” “Reserve Sharing Group ACE,” “Reporting ACE” and “Interconnection”) (**Exhibit A**) are just, reasonable, not unduly discriminatory or preferential, and in the public interest.<sup>2</sup> NERC also provides notice of the associated implementation plan (**Exhibit B**), Violation Risk Factors (“VRFs”) and Violation Severity Levels (“VSLs”) (**Exhibit F**), and retirement of Reliability Standard BAL-001-1 as detailed in this filing.

This filing presents the technical basis and purpose of proposed Reliability Standard and definitions, a summary of the development history (**Exhibit G**), and a demonstration that the proposed Reliability Standard meets the Reliability Standards criteria identified (**Exhibit C**). Proposed Reliability Standard BAL-001-2 was approved by the NERC Board of Trustees on August 15, 2013.

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<sup>1</sup> The BAL-001 Reliability Standard is also commonly referred to as “Control Performance Standard 1” or “CPS1.”

<sup>2</sup> Unless otherwise designated, all capitalized terms shall have the meaning set forth in the *Glossary of Terms Used in NERC Reliability Standards*, available at [http://www.nerc.com/files/Glossary\\_of\\_Terms.pdf](http://www.nerc.com/files/Glossary_of_Terms.pdf)

## **I. EXECUTIVE SUMMARY**

The purpose of proposed Reliability Standard BAL-001-2 is to maintain Interconnection frequency within predefined frequency limits. The reliable operation of an electric power system depends on careful management of the balance between generation and load to ensure that system frequency is maintained within narrow bounds around a scheduled value. The proposed Reliability Standard improves reliability by adding a frequency component to the measurement of a Balancing Authority's Area Control Error ("ACE") and allows for the formation of "Regulation Reserve Sharing Groups." Furthermore, the proposed BAL-001-2 Reliability Standard and accompanying definitions, include the benefits of the Automatic Time Error Correction ("ATEC") equation in the WECC-specific regional variance in Reliability Standard BAL-001-1.<sup>3</sup>

Balancing Authorities are responsible for generation-demand-interchange balance in the Balancing Authority Area and contribute to Interconnection frequency in Real-time. ACE is the instantaneous difference between a Balancing Authority's Net Actual and Scheduled Interchange, taking into account the effects of Frequency Bias, correction for meter error, and ATEC, if operating in the ATEC mode.<sup>4</sup> The proposed Reliability Standard defines "Balancing Authority ACE Limit" ("BAAL") and requires a Balancing Authority to balance its resources and demand in Real-time so that its clock-minute average of its ACE does not exceed its BAAL for more than 30 consecutive clock-minutes.

The proposed Reliability Standard consists of two Requirements and two Attachments, which set forth the mathematical equations that support Requirements R1 and R2 and the

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<sup>3</sup> The currently-effective BAL-001-1 Reliability Standard includes a WECC regional variance which has been incorporated into the continent-wide proposed BAL-001-2 Reliability Standard through the definition of "Reporting ACE," as explained herein. This incorporation is consistent with FERC precedent, as FERC has noted, "The Commission seeks as much uniformity as possible in the proposed Reliability Standards across the interconnected Bulk-Power System of the North American continent." Order No. 672 at P 41.

<sup>4</sup> ATEC is only applicable to Balancing Authorities in the Western Interconnection.

accompanying Measures. Requirement R1 is intended to measure how well a Balancing Authority is able to control its generation and load management programs, as measured by its ACE, to support its Interconnection's frequency over a rolling one-year period. Requirement R2 is intended to enhance the reliability of each Interconnection by maintaining frequency within predefined limits under all conditions. Collectively, these Requirements and Attachments support the reliability of the Bulk-Power System.

The effective date of the Reliability Standard will be the first day of the first calendar quarter that is twelve months beyond the date that this standard is approved by applicable regulatory authorities, or in those jurisdictions where regulatory approval is not required, the standard becomes effective the first day of the first calendar quarter that is twelve months beyond the date this standard is approved by the NERC Board of Trustees, or as otherwise made effective pursuant to the laws applicable to such ERO governmental authorities..<sup>5</sup> As explained below, the proposed BAL-001-2 Reliability Standard and definitions is just and reasonable.

## **II. NOTICES AND COMMUNICATIONS**

Notices and communications with respect to this filing may be addressed to the following:

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<sup>5</sup> The proposed implementation period will allow entities to make any software adjustments that may be required to perform the BAAL calculations.

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### **III. BACKGROUND**

#### **A. NERC Reliability Standards Development Procedure**

The proposed Reliability Standards were developed in an open and fair manner and in accordance with the Reliability Standard development process. NERC develops Reliability Standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC Standard Processes Manual.<sup>6</sup> NERC's proposed rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing Reliability Standards and thus satisfies certain of the criteria for approving Reliability Standards. The development process is open to any person or entity with a legitimate interest in the reliability of the Bulk-Power System. NERC considers the comments of all stakeholders, and a vote of stakeholders and the NERC Board of Trustees is required to approve a Reliability Standard before the Reliability Standard is submitted to the applicable governmental authorities for approval.

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<sup>6</sup> The NERC Rules of Procedure are available at <http://www.nerc.com/AboutNERC/Pages/Rules-of-Procedure.aspx>. The NERC Standard Processes Manual is available at [http://www.nerc.com/comm/SC/Documents/Appendix\\_3A\\_StandardsProcessesManual.pdf](http://www.nerc.com/comm/SC/Documents/Appendix_3A_StandardsProcessesManual.pdf).



**B. History of Project 2010-14.1: Phase 1 of Balancing Authority Reliability-Based Controls: Reserves**

The NERC Standards Committee approved the merger of Project 2007-05 Balancing Authority Controls and Project 2007-18 Reliability-based Control as Project 2010-14 Balancing Authority Reliability-based Controls (commonly referred to as “BARC”) on July 28, 2010. The NERC Standards Committee also approved the separation of Project 2010-14 Balancing Authority Reliability-based Controls into two phases and moving Phase 1 (Project 2010-14.1 Balancing Authority Reliability-based Controls - Reserves) into formal standards development on July 13, 2011.<sup>7</sup> A field trial was approved by the NERC Standards Committee and Operating Committee and is ongoing. The results of the field trial thus far support the proposed Reliability Standard and a report is currently in development.

**IV. JUSTIFICATION**

The purpose of proposed Reliability Standard BAL-001-2 is to maintain Interconnection frequency within predefined frequency limits. As discussed in detail in **Exhibit C**, proposed Reliability Standard BAL-001-2 satisfies the Reliability Standards criteria and is just, reasonable, not unduly discriminatory or preferential, and in the public interest.

**A. BAL-001-2 – REAL POWER BALANCING CONTROL PERFORMANCE**

Provided below is the following: (1) the procedural history of the BAL-001 Reliability Standard; (2) an explanation of the proposed definitions; and (3) and an explanation of the proposed BAL-001-2 Reliability Standard on a requirement-by-requirement basis.

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<sup>7</sup> The BAL-002 Reliability Standard, which addresses Contingency Reserve for recovery from a balancing contingency event, is part of this consolidated project and is currently in development. The proposed BAL-001-2 Reliability Standard is not directly linked to the content of the BAL-002-2 Reliability Standard and can be approved separately.

1. Procedural History

BAL-001-0 was submitted on April 4, 2006. An interpretation to BAL-001-0 was submitted on May 5, 2009. Errata changes to BAL-001-0 were submitted on May 5, 2009. Reliability Standard BAL-001-1 was submitted on October 13, 2013.

2. Proposed Definitions

NERC proposes four definitions for inclusion in the *Glossary of Terms Used in NERC Reliability Standards*. Provided below is the text of each proposed definition and an explanation of the need for these definitions.

- **Regulation Reserve Sharing Group:** A group whose members consist of two or more Balancing Authorities that collectively maintain, allocate, and supply the Regulating Reserve required for all member Balancing Authorities to use in meeting applicable regulating standards.

The proposed definition “Regulation Reserve Sharing Group” is necessary to acknowledge that entities may form contractual arrangements in order to maintain enough Regulating Reserve. This proposed definition is similar in concept to the terms “Reserve Sharing Group” and “Frequency Response Sharing Group.”

- **Reserve Sharing Group Reporting ACE:** At any given time of measurement for the applicable Regulation Reserve Sharing Group, the algebraic sum of the Reporting ACEs (or equivalent as calculated at such time of measurement) of the Balancing Authorities participating in the Regulation Reserve Sharing Group at the time of measurement.

The proposed definition of “Reserve Sharing Group Reporting ACE” facilitates the demonstration of compliance with the BAL-001 Reliability Standard by Regulating Reserve Sharing Groups. This allows for the formation of a virtual Balancing Authority Area while allowing each individual entity to maintain their political boundaries.

- **Reporting ACE:** The scan rate values of a Balancing Authority’s Area Control Error (ACE) measured in MW, which includes the difference between the Balancing Authority’s Net Actual Interchange and its Net Scheduled Interchange, plus its Frequency

Bias obligation, plus any known meter error. In the Western Interconnection, Reporting ACE includes Automatic Time Error Correction (ATEC).

Reporting ACE is calculated as follows:

$$\text{Reporting ACE} = (\text{NI}_A - \text{NI}_S) - 10B (F_A - F_S) - I_{ME}$$

Reporting ACE is calculated in the Western Interconnection as follows:

$$\text{Reporting ACE} = (\text{NI}_A - \text{NI}_S) - 10B (F_A - F_S) - I_{ME} + I_{ATEC}$$

Where:

**NI<sub>A</sub> (Actual Net Interchange)** is the algebraic sum of actual megawatt transfers across all Tie Lines and includes Pseudo-Ties. Balancing Authorities directly connected via asynchronous ties to another Interconnection may include or exclude megawatt transfers on those Tie Lines in their actual interchange, provided they are implemented in the same manner for Net Interchange Schedule.

**NI<sub>S</sub> (Scheduled Net Interchange)** is the algebraic sum of all scheduled megawatt transfers, including Dynamic Schedules, with adjacent Balancing Authorities, and taking into account the effects of schedule ramps. Balancing Authorities directly connected via asynchronous ties to another Interconnection may include or exclude megawatt transfers on those Tie Lines in their scheduled Interchange, provided they are implemented in the same manner for Net Interchange Actual.

**B (Frequency Bias Setting)** is the Frequency Bias Setting (in negative MW/0.1 Hz) for the Balancing Authority.

**10** is the constant factor that converts the Frequency Bias Setting units to MW/Hz.

**F<sub>A</sub> (Actual Frequency)** is the measured frequency in Hz.

**F<sub>S</sub> (Scheduled Frequency)** is 60.0 Hz, except during a time correction.

**I<sub>ME</sub> (Interchange Meter Error)** is the meter error correction factor and represents the difference between the integrated hourly average of the net interchange actual (NIA) and the cumulative hourly net interchange energy measurement (in megawatt-hours).

**I<sub>ATEC</sub> (Automatic Time Error Correction)** is the addition of a component to the ACE equation for the Western Interconnection that modifies the control point for the purpose of continuously paying back Primary Inadvertent Interchange to correct accumulated time error. Automatic Time Error Correction is only applicable in the Western Interconnection.

$$I_{ATEC} = \frac{\text{PII}_{\text{accum}}^{\text{on/off peak}}}{(1-Y)*H} \text{ when operating in Automatic Time Error Correction control mode.}$$

**I<sub>ATEC</sub>** shall be zero when operating in any other AGC mode.

- $Y = B / B_S$ .
- $H$  = Number of hours used to payback Primary Inadvertent Interchange energy. The value of  $H$  is set to 3.

- $B_S$  = Frequency Bias for the Interconnection (MW / 0.1 Hz).
- Primary Inadvertent Interchange ( $PII_{hourly}$ ) is  $(1-Y) * (II_{actual} - B * \Delta TE/6)$
- $II_{actual}$  is the hourly Inadvertent Interchange for the last hour.
- $\Delta TE$  is the hourly change in system Time Error as distributed by the Interconnection Time Monitor. Where:  

$$\Delta TE = TE_{end\ hour} - TE_{begin\ hour} - TD_{adj} - (t)*(TE_{offset})$$
- $TD_{adj}$  is the Reliability Coordinator adjustment for differences with Interconnection Time Monitor control center clocks.
- $t$  is the number of minutes of Manual Time Error Correction that occurred during the hour.
- $TE_{offset}$  is 0.000 or +0.020 or -0.020.
- $PII_{accum}$  is the Balancing Authority's accumulated  $PII_{hourly}$  in MWh. An On-Peak and Off-Peak accumulation accounting is required.

Where:

$$PII_{accum}^{on/off\ peak} = \text{last period's } PII_{accum}^{on/off\ peak} + PII_{hourly}$$

All NERC Interconnections with multiple Balancing Authorities operate using the principles of Tie-line Bias (TLB) Control and require the use of an ACE equation similar to the Reporting ACE defined above. Any modification(s) to this specified Reporting ACE equation that is(are) implemented for all BAs on an Interconnection and is(are) consistent with the following four principles will provide a valid alternative Reporting ACE equation consistent with the measures included in this standard.

1. All portions of the Interconnection are included in one area or another so that the sum of all area generation, loads and losses is the same as total system generation, load and losses.
2. The algebraic sum of all area Net Interchange Schedules and all Net Interchange actual values is equal to zero at all times.
3. The use of a common Scheduled Frequency  $F_S$  for all areas at all times.
4. The absence of metering or computational errors. (The inclusion and use of the  $I_{ME}$  term to account for known metering or computational errors.)

The proposed definition of "Reporting ACE" incorporates the equations in currently-effective Reliability Standard BAL-001-1 into the proposed definition. This proposed definition also incorporates the ATEC equation in the WECC-specific regional variance in Reliability Standard BAL-001-1.

- **Interconnection:** When capitalized, any one of the four major electric system networks in North America: Eastern, Western, ERCOT and Quebec.

The defined term “Interconnection” is used throughout the body of NERC Reliability Standards and the proposed revision to this definition corrects the currently-effective definition, to include the Quebec Interconnection.<sup>8</sup> The proposed revisions to this term are consistent with NERC’s international role as the Electric Reliability Organization.

### 3. Requirement-by-Requirement Justification

Proposed Reliability Standard BAL-001-2 consists of two Requirements and is applicable to Balancing Authorities and Regulation Reserve Sharing Groups (a proposed defined term, as explained herein). Provided below is an explanation of each of the Requirements of the proposed Reliability Standard.

#### **BAL-001-2, Requirement R1**

- R1. The Responsible Entity shall operate such that the Control Performance Standard 1 (CPS1), calculated in accordance with Attachment 1, is greater than or equal to 100 percent for the applicable Interconnection in which it operates for each preceding 12 consecutive calendar month period, evaluated monthly.

Requirement R1 of the BAL-001 Reliability Standard is commonly referred to as Control Performance Standard 1 (“CPS1”) and this terminology is maintained in the proposed Reliability Standard for historical continuity. Proposed Requirement R1 is a restatement of the BAL-001-1 Requirement R1 with the equation and explanation of the individual components moved to an attachment, Attachment 1 - *Equations Supporting Requirement R1 and Measure M1*. The proposed revisions to Requirement R1 are administratively efficient and clarify the intent of the Requirement.

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<sup>8</sup> The currently-effective definition of “Interconnection” is “When capitalized, any one of the three major electric system networks in North America: Eastern, Western, and ERCOT.”

Proposed Requirement R1 is intended to measure how well a Balancing Authority is able to control its generation and load management programs, as measured by its ACE, to support its Interconnection's frequency over a rolling one-year period. While the language of Requirement R1 has been modified, the underlying performance aspect of the Requirement is unchanged.

### **BAL-001-2, Requirement R2**

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

Proposed Requirement R2 is a new requirement intended to replace the currently-effective BAL-001-1 Requirement R2, commonly referred to as Control Performance Standard 2 ("CPS2"). The proposed Requirement R2 is intended to enhance the reliability of each Interconnection by maintaining frequency within predefined limits under all conditions. Attachment 2 sets forth the mathematical equations that support Requirement R2 and Measure M2.

The Balancing Authority ACE Limits ("BAAL") are unique for each Balancing Authority and provide dynamic limits for its ACE value limit as a function of its Interconnection frequency.<sup>9</sup> BAAL is defined by two equations; BAAL low and BAAL high. BAAL low is for Interconnection frequency values less than Scheduled Frequency, and BAAL high is for Interconnection frequency values greater than Scheduled Frequency. BAAL values for each Balancing Authority are dynamic and change as Interconnection frequency changes. For

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<sup>9</sup> BAAL was derived based on reliability studies and analysis which defined a Frequency Trigger Limit bound measured in Hz. The Frequency Trigger Limit is equal to Scheduled Frequency, plus or minus three times an Interconnection's Epsilon 1 value. Epsilon 1 is the root mean square targeted frequency error for each Interconnection, as recommended by the NERC Resources Subcommittee and approved by the NERC Operating Committee. Epsilon 1 values for each Interconnection are unique. When a Balancing Authority exceeds its BAAL, it is providing more than its share of risk that the Interconnection will exceed its Frequency Trigger Limit. When all Balancing Authorities are within their BAAL (high and low), the Interconnection frequency will be within its Frequency Trigger Limits.

example, as Interconnection frequency moves from Scheduled Frequency, the ACE limit for each Balancing Authority becomes more restrictive. The proposed Requirement R2 provides each Balancing Authority a dynamic ACE limit that is a function of Interconnection frequency.

In summary, the proposed Requirement will provide dynamic limits that are Balancing Authority and Interconnection specific. These ACE values are based on identified Interconnection frequency limits to ensure the Interconnection returns to a reliable state when an individual Balancing Authority's ACE or Interconnection frequency deviates into a region that contributes too much risk to the Interconnection. This proposed Requirement replaces and improves upon the current Requirement R2 and improves reliability by maintaining frequency within predefined limits under all conditions.

#### **B. Enforceability of Proposed Reliability Standard BAL-001-2**

The proposed Reliability Standard includes Violation Risk Factors (“VRFs”) and Violation Severity Levels (“VSLs”). The VSLs provide guidance on the way that NERC will enforce the Requirements of the proposed Reliability Standard. The VRFs are one of several elements used to determine an appropriate sanction when the associated Requirement is violated. The VRFs assess the impact to reliability of violating a specific Requirement. The VRFs and VSLs for the proposed Reliability Standards comport with NERC and Federal Energy Regulatory Commission (“FERC”) guidelines related to their assignment. For a detailed review of the VRFs, the VSLs, and the analysis of how the VRFs and VSLs were determined using these guidelines, please see **Exhibit F**.

The proposed Reliability Standard also includes Measures that support each Requirement by clearly identifying what is required and how the Requirement will be enforced. These Measures help ensure that the Requirements will be enforced in a clear, consistent, and non-preferential manner and without prejudice to any party.

Respectfully submitted,

/s/ Stacey Tyrewala

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*Counsel for the North American Electric  
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Date: May 13, 2014



**Exhibits A, B, and D – H**

**(Available on the NERC Website at**

**[http://www.nerc.com/FilingsOrders/ca/Canadian%20Filings%20and%20Orders%20DL/Attachments\\_BA\\_L-001-2\\_filing.pdf](http://www.nerc.com/FilingsOrders/ca/Canadian%20Filings%20and%20Orders%20DL/Attachments_BA_L-001-2_filing.pdf)**

## Exhibit C

### Reliability Standards Criteria

The discussion below explains how the proposed Reliability Standard has met or exceeded the Reliability Standards criteria:

**1. Proposed Reliability Standards must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve that goal.**

The proposed Reliability Standard achieves the specific reliability goal of ensuring that interconnection frequency is controlled within defined limits. The proposed Reliability Standard consists of two Requirements and two Attachments, which set forth the mathematical equations that support Requirements R1 and R2 and the accompanying Measures. Requirement R1 is intended to measure how well a Balancing Authority is able to control its generation and load management programs, as measured by its ACE, to support its Interconnection's frequency over a rolling one-year period. Requirement R2 is intended to enhance the reliability of each Interconnection by maintaining frequency within predefined limits under all conditions. Collectively, these Requirements and Attachments support the reliability of the Bulk-Power System.

**2. Proposed Reliability Standards must be applicable only to users, owners and operators of the bulk power system, and must be clear and unambiguous as to what is required and who is required to comply.**

The proposed Reliability Standard applies to Balancing Authorities and Regulation Reserve Sharing Groups and is clear and unambiguous as to what is required and who is required to comply. Section 4.1.1 clarifies that a Balancing Authority receiving Overlap Regulation Service is not subject to Control Performance Standard 1 (CPS1) or Balancing Authority ACE Limit (BAAL) compliance evaluation. Section 4.1.2 clarifies that a Balancing Authority that is a member of a Regulation Reserve Sharing Group is the Responsible Entity only in periods during

which the Balancing Authority is not in active status under the applicable agreement or the governing rules for the Regulation Reserve Sharing Group. The requirements clearly state who is required to comply with the standard.

**3. A proposed Reliability Standard must include clear and understandable consequences and a range of penalties (monetary and/or non-monetary) for a violation.**

The VRFs and VSLs for the proposed standard comport with NERC and FERC guidelines related to their assignment. The assignment of the severity level for each VSL is consistent with the corresponding Requirement and the VSLs should ensure uniformity and consistency in the determination of penalties. The VSLs do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations. For these reasons, the proposed Reliability Standard includes clear and understandable consequences.

**4. A proposed Reliability Standard must identify clear and objective criterion or measure for compliance, so that it can be enforced in a consistent and non preferential manner.**

The proposed Reliability Standard contains measures that support each requirement by clearly identifying what is required and how the requirement will be enforced. These measures help provide clarity regarding how the requirements will be enforced, and ensure that the requirements will be enforced in a clear, consistent, and non-preferential manner and without prejudice to any party.

**5. Proposed Reliability Standards should achieve a reliability goal effectively and efficiently — but do not necessarily have to reflect “best practices” without regard to implementation cost or historical regional infrastructure design.**

The proposed Reliability Standard achieves its reliability goals effectively and efficiently. Proposed Requirement R1 is intended to measure how well a Balancing Authority is able to

control its generation and load management programs, as measured by its ACE, to support its Interconnection's frequency over a rolling one-year period. While the language of Requirement R1 has been modified, the underlying performance aspect of the Requirement is unchanged. The proposed Requirement R2 is intended to enhance the reliability of each Interconnection by maintaining frequency within predefined limits under all conditions. Attachment 2 sets forth the mathematical equations that support Requirement R2 and Measure M2.

- 6. Proposed Reliability Standards cannot be “lowest common denominator,” i.e., cannot reflect a compromise that does not adequately protect Bulk-Power System reliability. Proposed Reliability Standards can consider costs to implement for smaller entities, but not at consequences of less than excellence in operating system reliability.**

The proposed Reliability Standard does not reflect a “lowest common denominator” approach. To the contrary, the proposed standard represents a significant improvement over the previous version as described herein.

- 7. Proposed Reliability Standards must be designed to apply throughout North America to the maximum extent achievable with a single Reliability Standard while not favoring one geographic area or regional model. It should take into account regional variations in the organization and corporate structures of transmission owners and operators, variations in generation fuel type and ownership patterns, and regional variations in market design if these affect the proposed Reliability Standard.**

The proposed Reliability Standard applies throughout North America and does not favor one geographic area or regional model. The proposed BAL-001-2 Reliability Standard and accompanying definitions, include the benefits of the Automatic Time Error Correction (“ATEC”) equation in the WECC-specific regional variance in Reliability Standard BAL-001-1.

The currently-effective BAL-001-1 Reliability Standard includes a WECC regional variance which has been incorporated into the continent-wide proposed BAL-001-2 Reliability Standard through the definition of “Reporting ACE,” as explained herein. This incorporation is

consistent with FERC precedent, as FERC has noted, “The Commission seeks as much uniformity as possible in the proposed Reliability Standards across the interconnected Bulk-Power System of the North American continent.” Order No. 672 at P 41.

**8. Proposed Reliability Standards should cause no undue negative effect on competition or restriction of the grid beyond any restriction necessary for reliability.**

The proposed Reliability Standard does not restrict the available transmission capability or limit use of the Bulk-Power System in a preferential manner.

**9. The implementation time for the proposed Reliability Standard is reasonable.**

The proposed effective date for the standard is just and reasonable and appropriately balances the urgency in the need to implement the standard against the reasonableness of the time allowed for those who must comply to develop necessary procedures, software, facilities, staffing or other relevant capability.

This will allow applicable entities adequate time to ensure compliance with the requirements. The proposed effective dates are explained in the proposed Implementation Plan, attached as **Exhibit B**.

**10. The Reliability Standard was developed in an open and fair manner and in accordance with the Commission-approved Reliability Standard development process.**

The proposed Reliability Standard was developed in accordance with NERC’s ANSI-accredited processes for developing and approving Reliability Standards. **Exhibit G** includes a summary of the Reliability Standard development proceedings, and details the processes followed to develop the standard.

These processes included, among other things, multiple comment periods, pre-ballot review periods, and balloting periods. Additionally, all meetings of the drafting team were

properly noticed and open to the public. The initial and final ballots both achieved a quorum and exceeded the required ballot pool approval levels.

**11. NERC must explain any balancing of vital public interests in the development of proposed Reliability Standards.**

NERC has identified no competing public interests regarding the request for approval of this proposed Reliability Standard. No comments were received that indicated the proposed standard conflicts with other vital public interests.

**12. Proposed Reliability Standards must consider any other appropriate factors.**

No other negative factors relevant to whether the proposed Reliability Standard is just and reasonable were identified.