

151 FERC ¶ 61,048
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

18 CFR Part 40

[Docket No. RM14-10-000; Order No. 810]

Real Power Balancing Control Performance Reliability Standard

(Issued April 16, 2015)

AGENCY: Federal Energy Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Federal Energy Regulatory Commission (Commission) approves Reliability Standard BAL-001-2 (Real Power Balancing Control Performance) and four new definitions submitted by the North American Electric Reliability Corporation (NERC), the Commission-certified Electric Reliability Organization. Reliability Standard BAL-001-2 is designed to ensure that applicable entities maintain system frequency within narrow bounds around a scheduled value, and improves reliability by adding a frequency component to the measurement of a Balancing Authority's Area Control Error. In addition, the Commission directs NERC to submit an informational filing pertaining to the potential impact of the Reliability Standard, and also directs NERC to revise one definition.

DATE: This rule will become effective [**INSERT DATE 60 days after publication in the FEDERAL REGISTER**].

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SUPPLEMENTARY INFORMATION:

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Before Commissioners: Norman C. Bay, Chairman;
Philip D. Moeller, Cheryl A. LaFleur,
Tony Clark, and Colette D. Honorable.

Real Power Balancing Control Performance
Reliability Standard

Docket No. RM14-10-000

ORDER NO. 810

FINAL RULE

(Issued April 16, 2015)

1. Pursuant to section 215 of the Federal Power Act (FPA),¹ the Commission approves Reliability Standard BAL-001-2 (Real Power Balancing Control Performance) submitted by the North American Electric Reliability Corporation (NERC), the Commission-certified Electric Reliability Organization (ERO). Reliability Standard BAL-001-2 applies to balancing authorities and Regulation Reserve Sharing Groups,² and is intended to ensure that Interconnection frequency is maintained within predefined frequency limits. The Commission also finds that Reliability Standard BAL-001-2 addresses the Commission's directive set forth in Order No. 693 pertaining to

¹ 16 U.S.C. 824(o).

² NERC defines Regulation Reserve Sharing Group as “[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.” NERC Petition at 7.

BAL-002-0.³ The Commission approves the retirement of currently-effective Reliability Standard BAL-001-1 immediately prior to the effective date of Reliability Standard BAL-001-2.

2. Further, the Commission approves NERC's four proposed definitions, associated violation risk factors and violation severity levels, implementation plan, and effective date. The Commission also directs NERC to submit an informational filing 90 days after the end of the two-year period following implementation that includes an analysis of data on whether experience with the Balancing Authority ACE Limit in the first two years after approval has seen ACE swings and inadvertent interchange⁴ and unscheduled power flows⁵ that could cause system operating limit (SOL) and interconnection reliability operating limit (IROL) exceedances, and further directs NERC to revise one definition.

I. Background

3. Section 215 of the FPA requires a Commission-certified ERO to develop mandatory and enforceable Reliability Standards that are subject to Commission review and approval. Specifically, the Commission may approve, by rule or order, a proposed

³ *Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, FERC Stats. & Regs. ¶ 31,242, *order on reh'g*, Order No. 693-A, 120 FERC ¶ 61,053 (2007).

⁴ Inadvertent interchange is “[t]he difference between the Balancing Authority’s Net Actual Interchange and Net Scheduled Interchange. ($I_A - I_S$).” NERC Glossary of Terms Used in Reliability Standards (NERC Glossary) at 42.

⁵ Unscheduled power flows generally refers to power flows that result from the law of physics that causes power from a given source to flow over all possible paths to its destination.

Reliability Standard or modification to a Reliability Standard if it determines that the Reliability Standard is just, reasonable, not unduly discriminatory or preferential and in the public interest.⁶ Once approved, the Reliability Standards may be enforced by NERC, subject to Commission oversight, or by the Commission independently.⁷

4. Pursuant to section 215 of the FPA, the Commission established a process to select and certify an ERO,⁸ and subsequently certified NERC as the ERO.⁹ Subsequent to the Commission's issuance of Order No. 693, approving 83 of the 107 Reliability Standards filed by NERC, the Commission approved Reliability Standard BAL-001-0 and companion Reliability Standard BAL-002-0.¹⁰ While approving Reliability Standard BAL-002-0, the Commission directed NERC "to modify this Reliability Standard to define a significant deviation and a reportable event, taking into account all events that have an impact on frequency, e.g., loss of supply, loss of load and significant scheduling

⁶ 16 U.S.C. 824o(d)(2).

⁷ *Id.* 824o(e).

⁸ *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, FERC Stats. & Regs. ¶ 31,204, *order on reh'g*, Order No. 672-A, FERC Stats. & Regs. ¶ 31,212 (2006).

⁹ *North American Electric Reliability Corp.*, 116 FERC ¶ 61,062, *order on reh'g and compliance*, 117 FERC ¶ 61,126 (2006), *aff'd sub nom. Alcoa, Inc. v. FERC*, 564 F.3d 1342 (D.C. Cir. 2009).

¹⁰ *North American Electric Reliability Corporation*, Docket No. RD13-11-000 (Oct. 16, 2013) (delegated letter order).

problems, which can cause frequency disturbances and to address how balancing authorities should respond.”¹¹

II. NERC Petition and Reliability Standard BAL-001-2

5. On April 2, 2014, NERC filed a petition seeking approval of Reliability Standard BAL-001-2, four new definitions to be added to the NERC Glossary and the associated violation risk factors and violation severity levels, effective date, and implementation plan.¹² In its petition, NERC explained that balancing generation and load is necessary to ensure that system frequency is maintained within narrow bounds based on a scheduled value. NERC stated that the purpose of Reliability Standard BAL-001-2 is to maintain Interconnection frequency within predefined frequency limits and that the 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.”¹³ NERC further stated that Reliability Standard BAL-001-2 is just, reasonable, not unduly discriminatory or preferential, and in the public interest because it satisfies the factors set forth in Order No. 672, which the Commission applies when reviewing a proposed Reliability Standard.¹⁴ Also, NERC

¹¹ Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 355.

¹² Reliability Standard BAL-001-2 not attached to this Final Rule. The standard is available on the Commission’s eLibrary document retrieval system in Docket No. RM14-10-000 and on the NERC website, www.nerc.com.

¹³ NERC Petition at 2.

¹⁴ *Id.* at 6 and Exhibit C (Order No. 672 Criteria) (citing Order No. 672, FERC Stats. & Regs. ¶ 31,204 at PP 323-335, 444).

asserted that Reliability Standard BAL-001-2 addresses the Commission's Order No. 693 directive pertaining to Reliability Standard BAL-002-0.

6. Reliability Standard BAL-001-2 replaces the Control Performance Standard 2 (CPS2) in currently-effective Requirement R2 with a new term: "Balancing Authority ACE Limit."¹⁵ The Balancing Authority ACE Limit, unique for each balancing authority, contains dynamic limits as a function of Interconnection frequency and provides the basis for a balancing authority's obligation to balance its resources and demand in real-time so that its clock-minute average ACE does not exceed its Balancing Authority ACE Limit for more than 30 consecutive clock-minutes.¹⁶

7. Reliability Standard BAL-001-2 has two requirements and two attachments that contain the mathematical equations for calculating the Control Performance Standard 1 (CPS1) in Requirement R1, the Balancing Authority ACE Limit in Requirement R2, and associated measures. NERC stated that the only change to Requirement R1 is to move the equation and explanation of the individual components of CPS1 to Attachment 1. NERC explained that the revisions to Requirement R1 "are administratively efficient and clarify the intent of the Requirement."¹⁷ NERC further stated that the "underlying performance aspect" of Requirement R1 remains the same: "to measure how well a

¹⁵ Area Control Error (ACE) is the "instantaneous difference between a Balancing Authority's net actual and scheduled interchange, taking into accounts the effects of Frequency Bias, correction for meter error, and Automatic Time Error Correction (ATEC), if operating in the ATEC mode. ATEC is only applicable to Balancing Authorities in the Western Interconnection." NERC Glossary at 7.

¹⁶ NERC Petition at 12.

¹⁷ NERC Petition at 11.

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."¹⁸

8. Requirement R2 is new and replaces the existing Control Performance Standard 2 requirement. Currently-effective Reliability Standard BAL-001-1, Requirement R2 requires each balancing authority to operate such that for at least 90 percent of the ten-minute periods in a calendar month (using six non-overlapping periods per hour), the average ACE must be within a specific limit, referred to as L_{10} .

9. Requirement R2 of Reliability Standard BAL-001-2 states:

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.

10. NERC explained that the Balancing Authority ACE Limit is unique for each balancing authority and provides dynamic limits for the balancing authority's ACE value as a function of its Interconnection frequency.¹⁹ NERC stated that Reliability Standard BAL-001-2 is intended to enhance the reliability of each Interconnection by maintaining frequency within predefined limits under all conditions. Furthermore, NERC stated that Reliability Standard BAL-001-2 and accompanying definitions include the benefits of the ATEC equation in the Western Electricity Coordinating Council's (WECC) regional

¹⁸ *Id.*

¹⁹ *Id.* at 12.

variance in Reliability Standard BAL-001-1.²⁰

11. In its petition, NERC proposed violation risk factors and violation severity levels for each requirement of Reliability Standard BAL-001-2, an implementation plan and an effective date. NERC stated that these proposals were developed and reviewed for consistency with NERC and Commission guidelines.

12. NERC proposed an effective date for Reliability Standard BAL-001-2 that is the first day of the first calendar quarter that is twelve months after the date of Commission approval. NERC stated that this implementation date will allow entities to make any software adjustment that may be required to perform the Balancing Authority ACE Limit calculations.²¹

13. On May 9, 2014, NERC submitted a supplemental filing to address the status of the Commission directive in Order No. 693 that NERC “define a significant deviation and a reportable event, taking into account all events that have an impact on frequency, e.g., loss of supply, loss of load and significant scheduling problems....”²² Further, NERC provided an update regarding the status of the field trial undertaken for BAL-001-2. In the supplemental filing, NERC reiterated the importance of establishing dynamic limits for a balancing authority’s ACE as a function of the Interconnection frequency, stating that “[o]ne of the reliability benefits of the proposed Reliability Standard is that it

²⁰ *Id.* at 2.

²¹ *Id.* at 3.

²² NERC May 9, 2014 Supplemental Filing at 3-5 (citing Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 355).

allows Balancing Authorities to calculate their position within these boundaries on a real-time basis and take action to support reliability.”²³ Further, NERC stated that Reliability Standard BAL-001-2 addresses the Commission’s directive related to BAL-002-0 “in an equally efficient and effective manner.”²⁴ NERC added that revisions to Reliability Standard BAL-002-1 are currently being developed and will complement Reliability Standard BAL-001-2. Regarding the ongoing field trial, discussed below, NERC stated that “the widespread participation of Balancing Authorities has provided insight into how the changes in Reliability Standard BAL-001-2 will impact reliability.”²⁵

14. On July 31, 2014, NERC submitted an informational filing of its Preliminary Field Trial Report evaluating the effects of Reliability Standard BAL-001-2.²⁶ NERC stated that the Field Trial Report results to date demonstrate that the correlation between Requirements R1 and R2 of Reliability Standard BAL-001-2 drive corrective actions to support Interconnection frequency and reliability.²⁷ NERC also stated that the Balancing Authority ACE Limit, in conjunction with currently-effective Reliability Standard BAL-003-1 (Frequency Response and Frequency Bias Setting), satisfies the directive in Order

²³ *Id.* at 2.

²⁴ *Id.* at 3.

²⁵ NERC Supplemental Filing at 6 (stating that 47 balancing authorities participated in the field trial: 16 in the Eastern Interconnection, 29 in the Western Interconnection, ERCOT and Québec).

²⁶ NERC July 31, 2014 Informational Filing (Field Trial Report).

²⁷ NERC Field Trial Report at 1.

No. 693 pertaining to Reliability Standard BAL-002-0.²⁸

III. Notice of Proposed Rulemaking

15. On November 20, 2014, the Commission issued a Notice of Proposed Rulemaking (NOPR) proposing to approve Reliability Standard BAL-001-2 as just, reasonable, not unduly discriminatory or preferential and in the public interest.²⁹ The Commission also proposed to approve NERC's four proposed definitions, violation risk factor and violation severity level assignments, and the retirement of currently-effective Reliability Standard BAL-001-1.³⁰ The NOPR stated that the new Balancing Authority ACE Limit in Reliability Standard BAL-001-2 encourages operation in support of Interconnection frequency and drives corrective action back within predefined ACE limits when needed to adjust Interconnection frequency.

16. While the Commission proposed to approve Reliability Standard BAL-001-2, the Commission raised concerns regarding the potential of the Reliability Standard to contribute to unscheduled power flows and inadvertent interchange. Based on that

²⁸ *Id.* at 14.

²⁹ *Real Power Balancing Control Performance Reliability Standard*, Notice of Proposed Rulemaking, 79 Fed. Reg. 70,483 (November 26, 2014), 149 FERC ¶ 61,139 (2014).

³⁰ The four proposed definitions for inclusion in the NERC Glossary are: Regulation Reserve Sharing Group, Reserve Sharing Group Reporting ACE, Reporting ACE, and Interconnection. NERC Petition at 7-10. The standard drafting team explained that Regulation Reserve Sharing Group will be added to the NERC Compliance Registry prior to implementation of the Reliability Standard. NERC Petition, Exhibit G (Summary of Development History and Complete Record of Development), Consideration of Comments, April 2013 at 13.

concern, the Commission proposed to direct NERC to monitor unscheduled power flows and inadvertent interchange in the Western and Eastern Interconnections and submit an informational filing following implementation of the Reliability Standard providing the number of SOL/IROL violations, the date, time, location, duration and magnitude due to unscheduled power flows and inadvertent interchange. In the NOPR, the Commission sought comments on the following issues: (1) the need for an informational filing and whether NERC should include additional data pertaining to unscheduled power flows and inadvertent interchange in its informational filing; and (2) whether a regional variance would be necessary for a region experiencing adverse impacts from the Reliability Standard due to inadvertent interchange.

17. In response to the NOPR, the Commission received comments from: NERC, Tri-State Generation and Transmission Association, (Tri-State), Arizona Public Service Company (APS), Edison Electric Institute (EEI), NaturEner USA (NaturEner), Regional Transmission Organizations—Midcontinent Independent System Operator, ISO New England, and PJM Interconnection (collectively “Indicated RTOs”), The Steel Manufacturers Association (SMA), Duke Energy Corporation (Duke), Western Area Power Administration (WAPA), Powerex Corp (Powerex), New York Independent System Operator (NYISO), and Bonneville Power Administration (BPA).

IV. Discussion

18. Pursuant to FPA section 215(d)(2), we approve Reliability Standard BAL-001-2 as just, reasonable, not unduly discriminatory or preferential, and in the public interest. The purpose of Reliability Standard BAL-001-2 is to control Interconnection frequency

within defined limits. The Commission determines that the Reliability Standard will help ensure that Interconnection frequency is maintained through both long and short term performance measures for Interconnection frequency control and dynamic (i.e., real-time) limits that are specific for each balancing authority and Interconnection.³¹ We find that, by basing Balancing Authority ACE Limits on predefined frequency trigger limits for each Interconnection, the real-time measurements established in the Reliability Standard will help ensure that the Interconnection frequency returns to a reliable state should a balancing authority's ACE, or the Interconnection's frequency, exceed acceptable bounds.

19. We also determine that the Reliability Standard satisfies the outstanding directive concerning Reliability Standard BAL-002 set forth in Order No. 693, as explained in the NOPR,³² and approve NERC's four definitions, violation risk factor and violation severity level assignments, and the retirement of currently-effective Reliability Standard BAL-001-1. Further, we approve NERC's implementation plan, in which NERC proposes an effective date of the first day of the first calendar quarter, twelve months after the date of Commission approval.³³

20. While approving Reliability Standard BAL-001-2, as discussed below, we direct NERC to submit an informational filing to assess the potential impact of the Reliability

³¹ NERC Supplemental Filing at 2.

³² NOPR, 149 FERC ¶ 61,139 at PP 18-19.

³³ NERC Petition, Ex. B (Implementation Plan for Proposed Reliability Standard BAL-001-2) at 4.

Standard as described herein and to revise the definition of the term Reporting ACE in the NERC Glossary.

21. We discuss below the following issues raised in the NOPR and addressed in the comments: (A) the proposed informational filing and NOPR comments regarding the need to revise the definition of the term Reporting ACE; and (B) whether a regional variance is necessary to address possible adverse impacts from the implementation of Reliability Standard BAL-001-2.

A. Informational Filing and Definition of Reporting ACE

NOPR

22. In the NOPR, the Commission noted that feedback from some stakeholders who participated in the field trial indicated that the Balancing Authority ACE Limit established in Requirement R2 of Reliability Standard BAL-001-2 could increase unscheduled power flows, possibly resulting in approaching or exceeding SOL/IROL violations. The NOPR observed that, in comments submitted to NERC's standard drafting team, one large transmission operator stated that the Balancing Authority ACE Limit could increase the number of system operating limit violations, and could cause large unscheduled power flows resulting in an increased ACE.³⁴ Another stakeholder commented that the Balancing Authority ACE Limit could provide opportunities for entities to create unscheduled power flows within the boundaries established by the

³⁴ NOPR, 149 FERC ¶ 61,139 at P 20 (citing NERC Petition, Ex. G (Summary of Development History and Complete Record of Development), Consideration of Comments, April 2013 at 43).

Reliability Standard.³⁵

23. The NOPR stated that, while NERC asserted that there was no relationship between the Balancing Authority ACE Limit field trial and accumulated inadvertent interchange, a large allowance of ACE deviations could increase the amount of inadvertent interchange on the bulk electric system. The NOPR explained that Reliability Standard BAL-001-2 could allow balancing authorities to have a very large deviation from an ACE of zero and still be compliant with the dynamic values of the Balancing Authority ACE Limits in the proposed Reliability Standard.³⁶

24. Based on this information, in the NOPR, the Commission expressed concern that Reliability Standard BAL-001-2 may have the “unintended consequence” of (i) creating large unscheduled power flows that could unduly burden transmission operators and reliability coordinators in addressing power flows that approach or exceed system operating limits or interconnection reliability operating limits, and (ii) causing significant increases in inadvertent interchange resulting in an adverse reliability impact between real-time operations and day and/or hour-ahead analysis performed by reliability coordinators and transmission operators.³⁷

25. In order to evaluate the effect of the Reliability Standard on unscheduled power flows and inadvertent interchange and the potential impact on the Bulk-Power System, the NOPR proposed to direct NERC to submit an informational filing to monitor

³⁵ *Id.*, Ex. G, Consideration of Comments, at 77.

³⁶ NOPR, 149 FERC ¶ 61,139 at P 21.

³⁷ *Id.* P 22.

unscheduled flows and inadvertent interchange in the Western and Eastern Interconnections 90 days after the end of the two-year period following implementation. Specifically, the NOPR proposed that NERC's informational filing provide "the number of SOL/IROL violations, the date, time, location, the duration and magnitude, due to unscheduled power flows and inadvertent interchange within [the] Western and Eastern Interconnections."³⁸ Further, the NOPR stated that the Commission expects NERC will immediately propose and implement adequate remedies should there be increases in unscheduled flow and inadvertent interchange causing reliability issues under the new Balancing Authority ACE Limit during the two-year period covered by the informational filing.

Comments

26. NERC states that it does not support the Commission's proposed directive to submit an informational filing with the data described in the NOPR, because it "will not conclusively demonstrate that large ACE swings are correlated with unscheduled power flow and Inadvertent Interchange causing SOL/IROL exceedances."³⁹ NERC asserts that the proposed directive "is based on the speculative opinions of commenters, supported by no documented evidence that the proposed Reliability Standard contributes to unscheduled power flows and Inadvertent Interchange," and would not be an effective

³⁸ *Id.* P 23.

³⁹ NERC Comments at 6.

use of NERC or industry resources.⁴⁰

27. NERC states that the field trial has not produced any “positive evidence” establishing that implementing the Balancing Authority ACE Limit causes high ACE swings negatively affecting frequency, or relates to unscheduled power flows or inadvertent interchange causing SOL/IROL exceedances. Further, NERC asserts that “high ACE swings are not necessarily determinative of overloading transmission or SOL/IROL exceedances because SOL/IROL exceedances can still occur when ACE is zero.”⁴¹

28. While disagreeing with the directive as proposed in the NOPR, NERC states that as a “first step” to addressing the Commission’s concerns, and to “investigate a possible correlation between [the] Balancing Authority ACE Limit and SOL/IROL exceedances as attributed to Inadvertent Interchange and unscheduled power flows,” NERC will provide the Commission with a “set of baseline data” including “tracking the number of SOL/IROL exceedances occurring in each interconnection where a Balancing Authority’s ACE was within BAAL.”⁴² NERC states that it would include this data in an informational filing, with the commitment to work with Commission staff to analyze the data.

⁴⁰ *Id.* at 8.

⁴¹ *Id.*

⁴² *Id.* at 8-9.

29. EEI, Indicated RTOs, NYISO, WAPA, APS, Duke, Tri-State, Powerex and BPA support the Commission's proposed informational filing. While supporting the proposed informational filing, EEI believes that the Reliability Standard "will support stronger management of interconnection frequency."⁴³ Indicated RTOs assert that "the trend in manual Time Error Correction is a better indicator of unscheduled flows. Operating limit violations resulting from unscheduled power flows and the trend in Time Error Correction will enable the Commission to evaluate the severity of any issues, and NERC and/or its operating committees routinely collect that information."⁴⁴

30. NYISO, Tri-State, BPA and Powerex, while supporting the Commission's proposal, urge that the Commission require NERC to provide more data in the informational filing than described in the NOPR. NYISO states that NERC should provide ACE and Balancing Authority ACE Limit values for the SOL/IROL violations associated with unscheduled power flows or inadvertent interchange. BPA asserts that NERC should examine all unscheduled power flows resulting from the implementation of the Balancing Authority ACE Limit, not just those related to SOL/IROL violations. BPA further states that NERC should be required to conduct an analysis every six months for the initial two year implementation period, including an examination of loss of supply events and their impact on frequency recovery.⁴⁵

⁴³ EEI Comments at 3-4.

⁴⁴ Indicated RTOs Comments at 5-6.

⁴⁵ BPA Comments at 7.

31. BPA states that the proposed definition of “Reporting ACE” should be revised to include the ATEC upper payback limit term “Lmax” and the bounds of that upper payback limit for I_{ATEC} . BPA notes that, while incorporating the WECC regional variance contained in currently effective Reliability Standard BAL-001-1 may have been NERC’s intent, this cannot be accomplished without including the “Lmax” upper payback limit and the bounds of that upper payback limit in the NERC Glossary. BPA asserts that without this language in the definition, the ATEC payback does not have an upper bound, which could cause some significant unscheduled flows in the interconnection, because a balancing authority with a large primary inadvertent accumulation could pay most of it off within a three hour period.

32. While supporting the objective of Reliability Standard BAL-001-2, Powerex expresses concern that “the ‘inadvertent interchange’ permitted by the modified standard will have a material, adverse impact on the western transmission markets subject to the Commission’s jurisdiction ... [and] Powerex believes that features of the proposed standard could be used to harm competition to the detriment of both transmission customers and system reliability.”⁴⁶ Powerex argues that the Balancing Authority ACE Limit “creates opportunities for commercially-interested [balancing authorities] to deliberately reduce their control of imbalances, effectively leaning on the grid to balance their systems. Such activity creates unscheduled flows on adjacent systems that can inequitably and inefficiently curtail the transmission capacity available to the

⁴⁶ Powerex Comments at 7.

transmission customers that have paid to use the transmission system.”⁴⁷

33. Powerex urges the Commission to “take additional steps to ensure that implementation of the BAAL requirement does not thwart the provision of open access transmission service in accordance with Commission policies.”⁴⁸ Specifically, Powerex states that the Commission should “direct NERC to supplement its petition with information regarding any rules or requirements that may be in place to protect against potential curtailments of transmission customers due to unscheduled flows associated with BAAL ACEs.”⁴⁹ Additionally, Powerex asserts that NERC’s informational filing should describe instances in which unscheduled flows associated with the Balancing Authority ACE Limit required curtailment of transmission customers or other mitigation measures, and that this information should be provided every six months during the initial two year implementation period. Powerex also asks the Commission to “provide guidance concerning the creation of deliberate [balancing authority] imbalances,” require balancing authorities to disclose ACE and Balancing Authority ACE Limit information, and direct NERC to implement safeguards to ensure that balancing authorities reduce their ACEs before the curtailment of transmission customers.⁵⁰ Tri-State agrees with Powerex’s comments.

⁴⁷ *Id.* at 8.

⁴⁸ *Id.* at 9.

⁴⁹ *Id.* at 22.

⁵⁰ Powerex Comments at 24-29.

34. EEI, Indicated RTOs and Duke suggest limiting the informational filing to the Western Interconnection. Indicated RTOs state that “there has been a decline in the number of time error corrections in the Eastern Interconnection during the course of the field trial. These outcomes suggest that BAL-001-2 works as intended, and does not trigger issue with respect to inadvertent interchange, at least in the Eastern Interconnection.”⁵¹ EEI asserts that unscheduled power flows and inadvertent interchange “have not been an issue within the Eastern Interconnection Field Trial, which has been in place now for nearly ten years. During this trial, approximately two-thirds of the Eastern Interconnection operated under the BAAL measure without issue. Therefore, EEI does not envision problems arising.”⁵² Similarly, Duke notes that the Field Trial Report specifically states that unscheduled power flows were not cited as problems within the Eastern Interconnection.⁵³

35. NaturEner addresses the time component of the Balancing Authority ACE Limit, an issue not raised in the NOPR. NaturEner states that the 30 consecutive clock-minute limitation on the time during which a balancing authority’s Reporting ACE can exceed its Balancing Authority ACE Limit should be extended to 60 consecutive clock-minutes. NaturEner asserts that the 30 minute time period provides insufficient time for a

⁵¹ Indicated RTOs Comments at 5.

⁵² EEI Comments at 4 (citing Field Trial Report at 13).

⁵³ Duke Comments at 4 (citing Field Trial Report at 13).

balancing authority to use market mechanisms to resolve imbalance events.⁵⁴ Further, NaturEner states that if Reliability Standard BAL-001-2 is approved in its current form, the Commission should “include severe loss of wind events as qualifying events under BAL-002, thereby qualifying such events as allowable contingency reserve events under which contingency reserves may be called upon.”⁵⁵

Commission Determination

36. The Commission adopts the NOPR proposal regarding NERC’s submission of an informational filing. We determine that the field trial NERC conducted for Reliability Standard BAL-001-2 raised sufficient concerns regarding unscheduled power flows and inadvertent interchange to warrant NERC’s continued monitoring and submission of an informational filing 90 days after the end of the two-year period following implementation, as proposed in the NOPR. Further, we find that the informational filing should encompass both the Western and Eastern Interconnections, as there were concerns about possible increases of SOL/IROL exceedances in both Interconnections.⁵⁶ EEI supports limiting the informational filing to the Western Interconnection, stating that the Balancing Authority ACE Limit has “been extensively used [in the Eastern

⁵⁴ NaturEner Comments at 1.

⁵⁵ *Id.* at 2-3.

⁵⁶ NYISO supports the inclusion of the Eastern Interconnection within the scope of the information filing. NYISO described the fundamental concern that “BAL-001-2 will allow balancing authorities to have a very large deviation from an Area Control Error (“ACE”)—and potentially negatively affect reliability—yet still be compliant with the dynamic values of the [Balancing Authority ACE Limits calculated pursuant to the proposed Reliability Standard.” NYISO Comments at 1.

Interconnection] for many years without issue.”⁵⁷ However, the Commission believes that including both Interconnections is reasonable, because less than 20 percent of balancing authorities in the Eastern Interconnection were in the field trial.⁵⁸

37. We are not persuaded by NERC’s objection to the informational filing, that the field trial “produced no conclusive results that large ACE swings are correlated with unscheduled power flow and Inadvertent Interchange causing SOL/IROL exceedances.”⁵⁹ While the field trial may not have been “conclusive,” the information in the report indicates the possibility of a correlation between large ACE swings and unscheduled power flows that warrant further study and analysis. Thus, we agree with the commenters who observed that the field trial demonstrated clear potential for the Balancing Authority ACE Limit to cause unscheduled power flows and inadvertent interchange that could lead to SOL/IROL problems.⁶⁰ While the Field Trial Report suggests that unscheduled flow events in the Western Interconnection may have occurred due to a number of factors, the Report does not eliminate large ACE swings as the cause.⁶¹ Accordingly, we conclude that the matter warrants further study and analysis, as

⁵⁷ EEI Comments at 1-2.

⁵⁸ Twenty-seven balancing authorities participated in the Western Interconnection field trial and eleven in the Eastern Interconnection. Field Trial Report at 11, 14.

⁵⁹ NERC Comments at 8.

⁶⁰ Tri-State Comments at 5, APS Comments at 3, EEI Comments at 4, Duke Energy Comments at 3-4, WAPA Comments at 3-4, Powerex Comments at 7, NYISO Comments at 1-2 and BPA Comments at 7-8.

⁶¹ NERC Field Trial Report at 16-17, 20.

directed.

38. We acknowledge NERC's commitment to take a "first step" to address the Commission's concerns by providing baseline data, including SOL/IROL exceedances where a balancing authority's ACE was within its Balancing Authority ACE Limit. However, we agree with those commenters who urge the Commission to require NERC to provide more data than described in the NOPR. Therefore, we direct NERC to make an informational filing 90 days after the end of the two-year period following implementation that includes an analysis of data (all relevant events or a representative sample) on whether experience with the Balancing Authority ACE Limit in the first two years after approval has seen ACE swings and unscheduled power flows or inadvertent interchange that could cause SOL/IROL exceedances. However, if it is evident that during this two-year period the issues discussed above are creating SOL/IROL exceedances NERC should provide that information to the Commission, together with appropriate recommendations for mitigation, as this information becomes available. Further, NERC should also make the underlying data available to Commission staff upon request. Regarding BPA's concerns about the interplay of Reliability Standards BAL-001-2 and BAL-002-1, the Commission believes those concerns are best addressed if and when NERC files with the Commission proposed changes to Reliability Standard BAL-002-1. However, we expect NERC to retain the data pursuant to the analysis directed above so that it will be available, if needed, to examine the effect of Reliability Standard

BAL-002-1 in relation to the Balancing Authority ACE Limit in the future.⁶²

39. Based on the record before us, the Commission is not persuaded by Powerex's assertion that Reliability Standard BAL-001-2 allows inadvertent interchange that "will have a material, adverse impact on the western transmission markets."⁶³ Further, there is no support in the record for Powerex's claim that there is evidence that during the field trial market participants seized "opportunities ... to deliberately reduce their control of imbalances, effectively leaning on their systems...resulting in an increase in unscheduled flows and degradation of transmission service in the region."⁶⁴ Powerex's broad assertions lack factual support in the record of this proceeding and are largely speculative.

40. We also note that Powerex presented an analysis of the impact of the Balancing Authority ACE Limit on unscheduled flow on the California Oregon Intertie to WECC's Unscheduled Flow Administrative Subcommittee. The WECC staff assessment of Powerex's analysis concluded that "[t]he results of the Powerex analysis are valid only within the assumptions they have made, but based upon actual path flow data we believe the assumptions are incorrect and lead to large overestimations of the RBC (Balancing

⁶² We leave it to NERC's discretion whether to include in the informational filing time error correction data, as suggested by the Indicated RTOs. (See Indicated RTOs Comments at 5-6.)

⁶³ Powerex Comments at 7.

⁶⁴ *Id.* at 8.

Authority ACE Limit) impact on Unscheduled Flow.”⁶⁵ Powerex’s reliance on the increase in e-tag curtailments across Path 36 (“TOT3” in eastern Wyoming and Colorado) noted in the WECC Performance Work Group’s December 2011 Quarterly Report on the RBC Field Trial as demonstrating that its concerns are “neither speculative or theoretical” is similarly unpersuasive.⁶⁶ The existence of e-tag curtailments during the field trial does not establish a causal connection with the Balancing Authority ACE Limit, because other factors, such as outages at the San Onofre Nuclear Generating Station unit in California; poor hydro conditions in Northern California; and other outages impacting energy import to California may have contributed to the curtailments. However, this uncertainty reinforces the need for the informational filing and additional study directed herein.

41. We determine that Powerex’s concerns about the possible adverse impacts from Reliability Standard BAL-001-2 on reliability, as well as competition and transmission markets, are unpersuasive. While expressing concern about the reliability risks associated with implementing Reliability Standard BAL-001-2, Powerex acknowledges that the extent to which the reliability risks it describes “will materialize remains to be seen.”⁶⁷ Instead, we agree with NERC that “[t]he field trial report finds that the results to

⁶⁵ NERC May 9, 2014 Supplemental Filing at 5, n.8 (citing Reliability-based Control Field Trial Report presented at January 2013 WECC Board of Directors meeting at 32) (*available at*: <https://www.wecc.biz/Administrative/Board%20Packet%20January%202013.pdf>.)

⁶⁶ Powerex Comments at 17.

⁶⁷ *Id.* at 20.

date demonstrate that the correlation between Requirements R1 and R2 of Reliability Standard BAL-001-2 drive corrective actions to support Interconnection frequency and reliability.”⁶⁸ With respect to Powerex’s concerns about the possibility that “gaps” in Reliability Standard BAL-001-2 could be “exploited to the detriment of transmission customers,” we encourage Powerex to engage in the ongoing monitoring effort and bring any specific instances of deliberate misconduct to the Commission’s attention if they occur.⁶⁹

42. We do not adopt NaturEner’s proposal that the 30 consecutive clock-minute time component should be extended to no less than 60 consecutive clock-minutes to allow the use of market mechanisms to address imbalance events. We note that in the Technical Conclusion section of the Field Trial Report the standard drafting team concluded that “[t]he selection of 30 consecutive clock minutes is appropriate and actually improves reliability.”⁷⁰ This conclusion is supported in the Field Trial Report by an adequate justification for the 30 consecutive clock-minute time period:

[S]imilar to the approach taken to address an IROL where operators are provided 30 minutes to assess options for mitigation, the team chose to use the more conservative limit of 30 minute, well within the risk-based criteria of the next resource loss, while also providing appropriate time for the operator to assess the current situation and take corrective actions as needed. Actual experience operating under the proposed standards has met

⁶⁸ Field Trial Report at 1.

⁶⁹ Powerex Comments at 9.

⁷⁰ Field Trial Report at 19.

with the support of all participating Real-time system operators.⁷¹

In light of this justification and our directive to NERC to monitor the implementation of Reliability Standard BAL-001-2 and submit an informational filing, we believe that NaturEner's request for annual reviews of the 30 consecutive clock-minute time component is unnecessary.⁷²

43. The Commission is persuaded by BPA's comments that a revision to the definition of Reporting ACE is warranted. In its petition, NERC states that currently-effective Reliability Standard BAL-001-1 includes a WECC regional variance which has been incorporated into the continent-wide Reliability Standard BAL-001-2 through the definition of Reporting ACE. However the definition of Reporting ACE does not include the "Lmax" upper payback limit and the bounds of that upper payback limit in the definition. Accordingly, the Commission directs NERC to revise the definition of Reporting ACE to include the "Lmax" upper payback limit and the bounds of that upper payback limit prior to the effective date of Reliability Standard BAL-001-1.

⁷¹ *Id.* The Commission notes that in accordance with Reliability Standard IRO-009-1 Requirement R2 and the definition for Interconnection Reliability Operating Limit T_v in the NERC Glossary, the 30 minute period is provided for operators to assess and implement options for mitigation of an IROL.

⁷² Regarding NaturEner's comment that the Commission should require that "severe loss of wind events" be considered Qualifying Events under BAL-002, we decline to do so in this rulemaking. NaturEner Comments at 9. NaturEner may raise its concern in NERC's current project to revise Reliability Standard BAL-002.

B. Need for a Regional Variance**NOPR**

44. In the NOPR, the Commission sought comment on whether a regional variance would be necessary for those regions that experienced adverse impacts from inadvertent interchange during the field trial. The NOPR observed that the Western Interconnection applies a limit of four times a balancing authority's L_{10} to limit ACE deviations from balancing authority flows that negatively impact the transmission system.

Comments

45. WAPA and BPA state that the Commission should direct NERC to include a regional variance to establish limits to the Balancing Authority ACE Limits for balancing authorities in the WECC before BAL-001-2 is implemented in the Western Interconnection. BPA states that currently in the Western Interconnection a limit of 4 times L_{10} is used, due to concerns with unscheduled flow. BPA states that WECC should continue to use this limit until a new limit is established.⁷³ Rather than a regional variance, Indicated RTOs state that a regional standard, or adjustments allowed by Reliability Standard BAL-001-2 to address inadvertent interchange, would be preferable.

Commission Determination

46. The Commission is not persuaded that there is a need for a regional variance for Reliability Standard BAL-001-2 for use in the Western Interconnection. NERC stated in its NOPR comments that NERC will develop a regional variance, or a modification to

⁷³ BPA Comments at 8. BPA states that NERC will need to retain the definition of L_{10} after currently-effective Reliability Standard BAL-001-1 is retired. *Id.*

Reliability Standard BAL-001-2, should NERC's analysis following the implementation of the Reliability Standard confirm the need for either measure.⁷⁴ We determine that NERC has described a sound approach for addressing this issue.

V. Information Collection Statement

47. The Office of Management and Budget (OMB) regulations require that OMB approve certain reporting and recordkeeping (collections of information) imposed by an agency.⁷⁵ Upon approval of a collection of information, OMB will assign an OMB control number and expiration date. Respondents subject to the filing requirements of this rule will not be penalized for failing to respond to these collections of information unless the collections of information displays a valid OMB control number.

48. The Commission is submitting these reporting and recordkeeping requirements to OMB for its review and approval under section 3507(d) of the Paper work Reduction Act. The NOPR solicited comments on the Commission's need for this information, whether the information will have practical utility, the accuracy of the provided burden estimate, ways to enhance the quality, utility, and clarity of the information to be collected, and any suggested methods for minimizing the respondent's burden, including the use of automated information techniques. No comments were received.

49. This final rule approves revisions to Reliability Standard BAL-001-2. NERC states in its petition that the Reliability Standard defines a new term: Balancing Authority ACE Limit, which is unique for each balancing authority and provides

⁷⁴ NERC Comments at 9.

⁷⁵ 5 C.F.R. 1320.11.

dynamic limits for a balancing authority's ACE value as a function of the Interconnection frequency.⁷⁶ NERC states that the Reliability Standard improves reliability by adding a frequency component to the measurement of a balancing authority's ACE, and allows for the formation of "Regulation Reserve Sharing Groups." NERC's Reliability Standard requires a balancing authority to balance its resources and demand in real-time so that the clock-minute average of its ACE does not exceed its Balancing Authority ACE Limit for more than 30 consecutive clock-minutes. Furthermore, NERC states that Reliability Standard BAL-001-2 and accompanying definitions include the benefits of the Automatic Time Error Correction equation in the WECC-specific regional variance in Reliability Standard BAL-001-1.⁷⁷ The Reliability Standard and related reporting requirements are applicable to balancing authorities and regulation reserve sharing groups.

50. Public Reporting Burden: Our estimate below regarding the number of respondents is based on the NERC Compliance Registry as of October 17, 2014. According to the NERC Compliance Registry, there are 71 balancing authorities in the Eastern Interconnection, 34 balancing authorities in the Western Interconnection and one balancing authority in the Electric Reliability Council of Texas (ERCOT). The Commission bases individual burden estimates on the time needed for balancing authorities to develop tools needed to facilitate reporting that is required in the Reliability Standard. These burden estimates are consistent with estimates for similar tasks in other

⁷⁶ NERC Petition at 12.

⁷⁷ *Id.* at 2.

Commission-approved Reliability Standards. The following estimates relate to the requirements for this final rule in Docket No. RM14-10-000.

FERC-725R, modifications in Final Rule in RM14-10-000 Final Rule⁷⁸						
	Number of Respondents (1)	Annual Number of Responses per Respondent (2)	Total Number of Responses (1)*(2)=(3)	Average Burden & Cost Per Response (4)	Total Annual Burden Hours & Total Annual Cost⁷⁹ (3)*(4)=(5)	Cost per Respondent (\$) (5)÷(1)
BA/RRSG: ⁸⁰ Update and Maintain Energy Management Systems	106	1	106	8 hours per response \$522 (8 x \$65.34)	848 \$55,332	\$522
BA Record Retention ⁸¹	106	1	106	4 \$118	424 \$12,508	\$118
TOTAL			212	640	1,272 \$67,840	\$640

⁷⁸ Reliability Standard BAL-001-2 applies to balancing authorities and regulation reserve sharing groups. However, the burden associated with the balancing authority complying with Requirement R1 is not included within this table because the Commission accounted for it under Commission-approved Reliability Standards BAL-001-1.

⁷⁹ The estimated hourly cost (salary plus benefits) of \$98.17 is based on Bureau of Labor Statistics (BLS) information of May 2013 (*and available at:* http://www.bls.gov/oes/current/naics2_22.htm) and is the average for an electrical engineer (NAICS 17-2071; \$65.34/hour) and a lawyer (NAICS 23-1011; \$128.76).

⁸⁰ BA=Balancing Authority; RRSB=Regulation Reserve Sharing Group.

⁸¹ The \$29.52/hour estimate for salary plus benefits is based on the BLS data of May 2013 for a file clerk (NAICS 43-4071)..

Title: FERC-725R Mandatory Reliability Standards: Resource and Demand Balancing (BAL) Reliability Standards.

Action: Proposed revision.

OMB Control No.: 1902-0268.

Respondents: Businesses or other for-profit institutions; not-for-profit institutions.

Frequency of Responses: On Occasion.

Necessity of the Information: This Final Rule approves Reliability Standard BAL-001-2 pertaining to requiring balancing authorities to operate such that its clock-minute average reporting ACE does not exceed its clock-minute Balancing Authority ACE Limits for more than 30 consecutive clock-minutes. Requirement R2 provides each balancing authority a dynamic ACE limit that is a function of Interconnection frequency.

Reliability Standard BAL-001-2 will provide dynamic limits that are balancing authority and Interconnection-specific. In addition, these ACE limits 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 deviation contributes undue risk to the Interconnection.

Internal Review: The Commission has reviewed Reliability Standard BAL-001-2 and has determined that it is necessary to implement section 215 of the FPA. The requirements of Reliability Standard BAL-001-2 should conform to the Commission's expectation for generation and demand balance throughout the Eastern and Western Interconnections as well as within the ERCOT Region.

51. Interested persons may obtain information on the reporting requirements by contacting the following: Federal Energy Regulatory Commission, 888 First Street, NE Washington, DC 20426 [Attention: Ellen Brown, Office of the Executive Director, e-mail: DataClearance@ferc.gov, phone: (202) 502-8663, fax: (202) 273-0873].

Comments on the requirements of this rule may also be sent to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503 [Attention: Desk Officer for the Federal Energy Regulatory Commission, phone: (202) 395-4638, fax: (202) 395-7285]. For security reasons, comments to OMB should be submitted by e-mail to: oira_submission@omb.eop.gov. Comments submitted to OMB should include FERC-725R and Docket Number RM14-10-000.

VI. Environmental Analysis

52. The Commission is required to prepare an Environmental Assessment or an Environmental Impact Statement for any action that may have a significant adverse effect on the human environment.⁸² The Commission has categorically excluded certain actions from this requirement as not having a significant effect on the human environment. Included in the exclusion are rules that are clarifying, corrective, or procedural or that do not substantially change the effect of the regulations being amended.⁸³ The actions here fall within this categorical exclusion in the Commission's regulations.

⁸² *Regulations Implementing the National Environmental Policy Act of 1969*, Order No. 486, FERC Stats. & Regs., Regulations Preambles 1986-1990 ¶ 30,783 (1987).

⁸³ 18 C.F.R. 380.4(a)(2)(ii).

VII. Regulatory Flexibility Act Certification

53. The Regulatory Flexibility Act of 1980 (RFA)⁸⁴ generally requires a description and analysis of proposed rules that will have significant economic impact on a substantial number of small entities. The NOPR stated that, as shown in the information collection section, Reliability Standard Reliability Standard BAL-001-2 applies to 106 entities. Comparison of the applicable entities with the Commission's small business data indicates that approximately 23 are small business entities.⁸⁵ Of these, the Commission estimates that approximately five percent, or one of these small entities, will be affected by the new requirements of Reliability Standard BAL-001-2.

54. In the NOPR, the Commission estimated that the small entities that will be affected by proposed Reliability Standard BAL-001-2 will incur one-time compliance cost up to \$109,180 (i.e., the cost of updating and maintaining energy management systems), resulting in cost of approximately \$1,030 per balancing authority and/or Regulation Reserve Sharing Groups. The Commission has revised the cost for small entities that will be affected by Reliability Standard BAL-001-2 and estimates that small entities will incur a one-time compliance cost up to \$55,332 (i.e., the cost of updating and maintaining energy management systems), resulting in cost of approximately \$522 per balancing authority and/or Regulation Reserve Sharing Group. These costs represent an estimate of the costs a small entity could incur if the entity is identified as an applicable entity. The Commission does not consider the estimated cost per small entity to have a

⁸⁴ 5 U.S.C. 601-612.

⁸⁵ This figure constitutes 21.4 percent of the total number of affected entities.

significant economic impact on a substantial number of small entities. The Commission did not receive any comments regarding this aspect of the NOPR. Based on the above, the Commission certifies that this Final Rule will not have a significant economic impact on a substantial number of small entities. Accordingly, no regulatory flexibility analysis is required.

VIII. Document Availability

55. In addition to publishing the full text of this document in the Federal Register, the Commission provides all interested persons an opportunity to view and/or print the contents of this document via the Internet through the Commission's Home Page (<http://www.ferc.gov>) and in the Commission's Public Reference Room during normal business hours (8:30 a.m. to 5:00 p.m. Eastern time) at 888 First Street, NE, Room 2A, Washington, DC 20426.

56. From the Commission's Home Page on the Internet, this information is available on eLibrary. The full text of this document is available on eLibrary in PDF and Microsoft Word format for viewing, printing, and/or downloading. To access this document in eLibrary, type the docket number excluding the last three digits of this document in the docket number field.

57. User assistance is available for eLibrary and the Commission's website during normal business hours from the Commission's Online Support at (202) 502-6652 (toll free at 1-866-208-3676) or email at ferconlinesupport@ferc.gov, or the Public Reference Room at (202) 502-8371, TTY (202) 502-8659. E-mail the Public Reference Room at public.referenceroom@ferc.gov.

IX. Effective Date and Congressional Notification

58. This Final Rule is effective [**INSERT DATE 60 days after publication in the FEDERAL REGISTER**]. The Commission has determined, with the concurrence of the Administrator of the Office of Information and Regulatory Affairs of OMB, that this rule is not a “major rule” as defined in section 351 of the Small Business Regulatory Enforcement Fairness Act of 1996.⁸⁶ The Commission will submit the final rule to both houses of Congress and to the General Accountability Office.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

⁸⁶ See 5 U.S.C. 804(2).