UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

North American Electric Reliability Corporation	**)**	**Docket No. _____**
	)	

JOINT PETITION OF THE NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION AND WESTERN ELECTRICITY COORDINATING COUNCIL FOR APPROVAL OF PROPOSED REGIONAL RELIABILITY STANDARD BAL-004-WECC-4

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March 12, 2025

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Pursuant to Section 215(d)(1) of the Federal Power Act ("FPA")[1] and Section 39.5 of the regulations of the Federal Energy Regulatory Commission ("FERC" or "Commission"),[2] the North American Electric Reliability Corporation ("NERC")[3] and the Western Electricity Coordinating Council ("WECC") hereby submit proposed Regional Reliability Standard BAL-004-WECC-4 Automatic Time Error Correction for Commission approval. Regional Reliability Standard BAL-004-WECC-4 seeks to improve upon the existing Reliability Standard by addressing an issue identified in a five-year review of the standard related to the Western Interchange Tool ("WIT") and currently effective Requirement R1 which could prevent new Balancing Authorities from determining values needed for compliance with the standard. Regional Reliability Standard BAL-004-WECC-4 addresses this issue by creating a Standard-specific definition "Interchange Software" to refer to the software used by Balancing Authorities to submit Automatic Time Error Correction ("ATEC") data to WECC to review the data, creating a requirement to use the proposed

[1] 16 U.S.C. § 824o.
[2] 18 C.F.R. § 39.5 (2023).
[3] The Commission certified NERC as the electric reliability organization ("ERO") in accordance with Section 215 of the FPA. *N. Am. Elec. Reliability Corp.*, 116 FERC ¶ 61,062 (2006), *order on reh'g & compliance,* 117 FERC ¶ 61,126 (2006), *aff'd sub nom. Alcoa, Inc. v. FERC*, 564 F.3d 1342 (D.C. Cir. 2009). [hereinafter ERO Certification Order].

Interchange Software, and addressing the treatment of Balancing Authorities that do not have a full year of operating data.

NERC and WECC request that the Commission approve the proposed Regional Reliability Standard, provided in Exhibit A hereto, as just, reasonable, not unduly discriminatory or preferential, and in the public interest. NERC and WECC also request approval of: (1) the associated Implementation Plan (Exhibit B); the associated Violation Risk Factors ("VRFs") and Violation Severity Levels ("VSLs") (Exhibit D); and the retirement of currently effective Regional Reliability Standard BAL-004-WECC-3.

As required by Section 39.5(a) of the Commission's regulations,[4] this petition presents the technical basis and purpose of the proposed Reliability Standard, a summary of the development history (Exhibit E), and a demonstration that the proposed Reliability Standard meets the criteria identified by the Commission in Order No. 672[5] (Exhibit C). The NERC Board of Trustees adopted the proposed Regional Reliability Standard on February 13, 2025.

I. SUMMARY

The purpose of proposed Regional Reliability Standard BAL-004-WECC-4 is to maintain Western Interconnection ("WI") frequency and ensure that time error accumulation via Primary Inadvertent Interchange ("PII") payback is conducted in a manner that does not result in a negative impact on reliability. The Commission first approved BAL-004-WECC-01 in 2009,[6] finding it benefits the reliable operation of the Bulk-Power System ("BPS") by creating an operating environment that encourages system operators to balance their generation and interchange with

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[4] 18 C.F.R. § 39.5(a).

[5] *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, 114 FERC 61,104 at PP 262, 321-37 (2006) [hereinafter Order No. 672], *order on reh'g*, Order No. 672-A, 114 FERC 61,328 (2006).

[6] *Western Electricity Coordinating Council Regional Reliability Standard Regarding Automatic Time Error Correction,* Order No.723, 127 FERC ¶ 61,176 (2009).

their load and losses to reduce the number of manual time error corrections. The currently effective version, BAL-004-WECC-3, was approved in 2018.[7]

Proposed Regional Reliability Standard BAL-004-WECC-4 improves upon the existing standard by addressing an issue identified with Requirement R1 of the currently effective standard. Currently, Regional Reliability Standard BAL-004-WECC- 3 Requirement R1 establishes limits on Accumulated Primary Inadvertent Interchange ("PIIaccum") based on a value determined from the "previous calendar year." In circumstances such as the creation of a new Balancing Authority or the shutdown of an existing Balancing Authority, these values may not be available. If a Balancing Authority does not have data from a previous calendar year, then Requirement R1 as written would establish a compliance limit of zero (0) MWh. Maintaining a monthly PIIaccum balance of zero as calculated by the WIT is not operationally feasible and could result in non-compliance with the standard which cannot be mitigated until the end of the calendar year. Proposed Regional Reliability Standard BAL-004-WECC-4 addresses this concern and improves upon the currently effective standard by: 1) expanding the existing Background section, 2) creating a Standard-specific definition "Interchange Software" to refer to the software used by Balancing Authorities to submit ATEC data to WECC, 3) creating a requirement to use the Interchange Software, 4) addressing treatment of Balancing Authorities that do not have a full year of operating data, 5) consolidating and clarifying requirements, and 6) updating the document to NERC's newest templates.

NERC and WECC respectfully request the Commission approve proposed regional Reliability Standard BAL-004-WECC-4, the associated VRFs and VSLs, the Implementation

[7] *N. Am. Elec. Reliability Corp.*, Docket No. RD18-2-000 (2018) (delegated letter order).

Plan, and the retirement of the existing regional Reliability Standard BAL-004-WECC-3. The following petition presents the justification for approval and supporting documentation.

II. NOTICES AND COMMUNICATIONS

Notices and communications with respect to this filing may be addressed to the following:[8]

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III. BACKGROUND

The following background information is provided below: (1) an explanation of the regulatory framework; (2) a description of the WECC Reliability Standards Development Procedure; and (3) the history of Project WECC-0147: BAL-004-WECC-3, ATEC Five-year Review with Focus on Requirement R1.

a. Regulatory Framework

By enacting the Energy Policy Act of 2005,[9] Congress entrusted the Commission with the duties of approving and enforcing rules to ensure the reliability of the Bulk-Power System, and with the duty of certifying an ERO that would be charged with developing and enforcing mandatory Reliability Standards, subject to Commission approval. Section 215(b)(1) of the FPA states that all users, owners, and operators of the Bulk-Power System in the United States will be

[8] Persons to be included on the Commission's service list are indicated with an asterisk. NERC and WECC respectfully request a waiver of Rule 203 of the Commission's regulations, 18 C.F.R. § 385.203, to allow the inclusion of more than two persons on the service list in this proceeding.

[9] 16 U.S.C. § 824o.

subject to Commission-approved Reliability Standards.[10] Section 215(d)(5) of the FPA authorizes the Commission to order the ERO to submit a new or modified Reliability Standard.[11] Section 39.5(a) of the Commission's regulations requires the ERO to file for Commission approval each Reliability Standard that the ERO proposes should become mandatory and enforceable in the United States, and each modification to a Reliability Standard that the ERO proposes to make effective.[12]

The Commission has the regulatory responsibility to approve Reliability Standards that protect the reliability of the Bulk-Power System and to ensure that such Reliability Standards are just, reasonable, not unduly discriminatory or preferential, and in the public interest. Pursuant to Section 215(d)(2) of the FPA and Section 39.5(c) of the Commission's regulations, the Commission will give due weight to the technical expertise of the ERO with respect to the content of a Reliability Standard.[13]

Similarly, the Commission approves regional differences proposed by Regional Entities, such as Regional Reliability Standards and Variances, if the regional difference is just, reasonable, not unduly discriminatory or preferential, and in the public interest.[14] In addition, Commission Order No. 672 requires further criteria for regional differences. A regional difference from a continent-wide Reliability Standard must either be: (1) more stringent than the continent-wide Reliability Standard, including a regional difference that addresses matters that the continent-wide Reliability Standard does not; or (2) necessitated by a physical difference in the Bulk-Power System.[15] The Commission must give due weight to the technical expertise of a Regional Entity,

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10 *Id.* § 824(b)(1).
11 *Id.* § 824o(d)(5).
12 18 C.F.R. § 39.5(a).
13 16 U.S.C. § 824o(d)(2); 18 C.F.R. § 39.5(c)(1).
14 16 U.S.C. § 824o(d)(2) and 18 C.F.R. § 39.5(a).
15 Order No. 672 at P 291.

like WECC, that is organized on an Interconnection-wide basis, with respect to a regional difference to be applicable within that Interconnection.[16]

b. WECC Reliability Standards Development Procedure

The proposed Regional Reliability Standard was developed in an open and fair manner and in accordance with the Commission-approved WECC Reliability Standards Development Procedures ("RSDP").[17] WECC's RSDP provides for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing Reliability Standards and thus addresses several of the Commission's criteria for approving Reliability Standards. The development process is open to any person or entity that is an interested stakeholder. WECC considers the comments of all stakeholders, and a vote of stakeholders and the WECC Board of Directors is required to approve a WECC regional Reliability Standard.[18] NERC posts each regional Variance developed by a Regional Entity for an additional comment period. The NERC Board of Trustees must adopt the regional Variance before it is submitted to the Commission for approval.

c. Development of the Proposed Reliability Standard

As further described in Exhibit E hereto, proposed regional Reliability Standard BAL-004-WECC-4 was developed as part of a five-year review of the currently effective Regional Reliability Standard in accordance with the WECC RSDP.[19] The project was titled, WECC-0147: BAL-004-WECC-3, ATEC Five-year Review with Focus on Requirement R1. The WECC Board of

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16 *Id.* at P 344.

17 The currently effective WECC RSDP was approved by the Commission on September 13, 2021. S*ee N. Am. Elec. Reliability Corp.*, Docket No. RR21-4-000 (2021) (approving revised WECC Reliability Standards Development Procedures). The WECC Reliability Standards Development Procedures are available at: https://www.wecc.org/sites/default/files/documents/standards/2024/WECC%20Reliability%20Standards%20Development%20Procedures%20-%20FERC%20Approved%2009-13-2021.pdf.

18 *Id.* at 12 (Treatment of Non-Substantive Changes. .Approval by the WECC Board of Directors is not required for Non-Substantive Changes).

19 *Id.*at 21 (WECC Reliability Standards Development Procedures, Maintenance of RRSs and CRTs).

Directors approved the standard on March 13, 2024 and submitted the proposed standard to the NERC Board of Trustees for adoption. NERC posted the proposed standard for a 45-day comment period from April 10 – May 28, 2024. During the comment period, NERC staff recommended that a proposed compliance waiver within the standard be removed because it could cause confusion regarding responsibilities of standard drafting teams to develop standards and the circumstances under which NERC Compliance Monitoring and Enforcement Staff may grant a compliance waiver excusing compliance with those standards, and the matter addressed in the proposed compliance waiver was already addressed in the mandatory and enforceable elements of the proposed regional Reliability Standard. The WECC Standards Committee ("WSC") agreed and approved the removal of the compliance waiver as a non-substantive change on September 6, 2024.[20]

The NERC Board of Trustees adopted the proposed regional standard on February 13, 2025.

IV. JUSTIFICATION FOR APPROVAL

As discussed in detail in Exhibit C, proposed Regional Reliability Standard BAL-004-WECC-4 is just, reasonable, not unduly discriminatory or preferential, and in the public interest. As described herein and in Exhibit C, the proposed Regional Reliability Standard provides reliability benefits for the BPS in the WECC region. As NERC and WECC noted in previous filings, ATEC reduces manual time error corrections, reduces accumulated Inadvertent Interchange, and better identifies the Balancing Authorities responsible for the Inadvertent

[20] *Id.*at 12. ("If a Non-Substantive Change to an RRS is required at any time after a WECC ballot window opens, the proposed change shall be presented to the WSC with a request for approval. If the WSC agrees that the correction of the error does not change the scope or intent of the associated RRS, and agrees that the correction has no material impact on the applicable entities, then the correction shall be filed for approval with NERC and applicable governmental authorities as appropriate.").

Interchange.[21] The proposed revisions to Regional Reliability Standard BAL-004-WECC-4 are intended to reflect current operational practice, provide clarity in Requirements, and resolve issues identified with the standard. Under the proposed Regional Reliability Standard, Balancing Authorities would continue to perform required tasks in the same or similar manner to the currently effective version of the standard.

As summarized above, proposed Regional Reliability Standard BAL-004-WECC-4 was developed to address an issue identified with Requirement R1 of the currently effective standard. The currently effective Requirement R1 establishes limits on PIIaccum based on a value determined from the "previous calendar year." In circumstances such as the creation of a new Balancing Authority or the shutdown of an existing Balancing Authority, these values may not be available. If a Balancing Authority does not have data from a previous calendar year, then Requirement R1 as written would establish a compliance limit of zero (0) MWh. Maintaining a monthly PIIaccum balance of zero as calculated by the WIT is not operationally feasible and could result in non-compliance with the standard which cannot be mitigated until the end of the calendar year.

As described in further detail below, the proposed Regional Reliability Standard addresses this concern and improves upon the currently effective standard by: 1) expanding the existing Background section, 2) creating a Standard-specific definition "Interchange Software", 3) creating a requirement to use the Interchange Software, 4) addressing treatment of Balancing Authorities that do not have a full year of operating data, 5) consolidating and clarifying requirements, and 6)

[21] *Joint Petition of the North American Electric Reliability Corporation and Western Electricity Coordinating Council for Approval of BAL-004-WECC-3* Docket No. RD18-2-000 (Mar. 8, 2018) at 7; *Joint Petition of the North American Electric Reliability Corporation and Western Electricity Coordinating Council for Approval of BAL-004-WECC-02 and BAL-001-1*, Docket No. RD13-11-000 (Aug. 20, 2013) at 6-7; *Petition of the North American Electric Reliability Corporation for Approval of One Proposed Western Electricity Coordinating Council Regional Reliability Standard Regarding Automatic Time Error Correction and Three Definitions*, Docket No. RM08-12-000 (July 29, 2008) at 8.

updating the document to NERC's newest templates. The proposed Regional Reliability Standard continues to address matters not addressed in any other continent-wide Reliability Standard and remains necessary for reliability in the Western Interconnection.

a. Proposed Substantive Revisions to Standard and Requirements

Proposed Regional Reliability Standard BAL-004-WECC-4 proposes to create and use a Standard-specific definition for the term "Interchange Software" in a newly proposed Requirement R1. The proposed definition is as follows:

> **Interchange Software:** The single electronic confirmation tool identified by the Western Electricity Coordinating Council (WECC), or its successor, to be used by all Balancing Authorities throughout the Western Interconnection (WI), that serves as the primary means for confirmation and creation of the final record of Scheduled Net Interchange (NI_S[5]) and Actual Net Interchange (NI_A[6]), during all periods when the Interchange Software is available.
>
> [5] Previously called Net Scheduled Interchange.
>
> [6] Previously called Net Actual Interchange

WECC's proposed definition of "Interchange Software" is intended to allow WECC the flexibility to change the software Balancing Authorities must use to calculate hourly PII, PIIaccum, and ATEC if issues or concerns arise without having to revise the standard. Additionally, the proposed "Interchange Software" definition replaces the legacy terms "Net Actual Interchange" and "Net Scheduled Interchange" with "Actual Net Interchange" and "Scheduled Net Interchange", respectively, to conform with the *Glossary of Terms used in NERC Reliability Standards*.[22]

Proposed Regional Reliability Standard BAL-004-WECC-4 Requirement R1 is as follows:

[22] The *Glossary of Terms Used in NERC Reliability Standards* ("NERC Glossary" or "Glossary") is available on the NERC website at https://www.nerc.com/pa/Stand/Glossary%20of%20Terms/Glossary_of_Terms.pdf. Unless otherwise indicated, all capitalized terms used in this petition shall have the meaning set forth in the NERC Glossary.

R1. Each Balancing Authority shall use the Interchange Software as the sole source of data to calculate its ATEC. *[Violation Risk Factor: Severe] [Time Horizon: Operations Assessment]*

As described above, this change would allow WECC to replace the software tool used to calculate the ATEC if any issues with the software arise.

Proposed Regional Reliability Standard BAL-004-WECC-4 revises the currently effective version of Requirement R1 to become Requirement R2 to address the issue described above that Balancing Authorities must have a monthly PIIaccum balance based on a value determined from the "previous calendar year". In certain circumstances, these values may not be available, like when a new Balancing Authority is created or an existing Balancing Authority is shut down. In these instances, currently effective Requirement R1 would establish a monthly PIIaccum balance limit of zero (0) MWh and can result in non-compliance for these Balancing Authorities until the end of the calendar year. Proposed Regional Reliability Standard BAL-004-WECC-4 Requirement R2 is as follows:

R2. Each Balancing Authority shall operate its system such that, ~~following the conclusion of each month,~~ the month-end absolute value of its On-Peak and Off-Peak, ~~Accumulated~~ accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the ~~WECC~~ Interchange ~~Tool (WIT) or its successor electronic confirmation tool~~ Software, are each individually less than or equal to 150% of the previous calendar year's integrated hourly peak demand where peak demand is total load plus total exports. *[Violation Risk Factor Medium:] [Time Horizon: Operations Assessment]*

2.1 For ~~load-serving~~ new Balancing Authorities, ~~150% of the previous calendar year's integrated hourly Peak Demand~~, the peak demand will be the maximum hourly integrated peak demand as it increases during the first year of operation.

As shown above, proposed Requirement R2 Part 2.1 moves the language about how to determine PIIaccum for existing Balancing Authorities into the main body of Requirement R2, and proposed Requirement R2 Part 2.1 is revised to state how new Balancing Authorities should

determine their PIIaccum balance. This revision would prevent new Balancing Authorities from having no value available for their PIIaccum and causing unintended non-compliance.

b. Proposed Clarifying Revisions to Standard and Requirements

The following proposed revisions to Requirements R3 through R8 are intended to enhance clarity and make proposed Regional Reliability Standard BAL-004-WECC-4 as unambiguous as possible to avoid confusion.

Proposed Regional Reliability Standard BAL-004-WECC-4 revises the currently effective versions of Requirements R2 and R6 to become Requirement R3 to specify PII errors must be recalculated and corrected by the Balancing Authority within 90 days of being discovered. This would enhance clarity and ensure PII errors are corrected in a timely manner.

Proposed Regional Reliability Standard BAL-004-WECC-4 Requirement R3 is as follows:

R3. Each Balancing Authority shall, upon discovery of an error in ~~the~~ its On-Peak or Off-Peak Inadvertent Interchange calculation ~~of PII_{hourly}~~, recalculate and correct the Inadvertent Interchange values within 90 days~~, the value of PII_{hourly} and adjust the PII_{accum}~~ from the time ~~of~~ the error is discovered. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

Proposed Regional Reliability Standard BAL-004-WECC-4 revises the currently effective version of Requirement R3 to become Requirement R4 to specify that the 24 hours per calendar quarter exception period for ATEC to be out of service does not include any periods in which the Interchange Software is unavailable. This would avoid any Interchange Software outages counting towards a Balancing Authority's allowed exception time and causing noncompliance outside of its control.

Proposed Regional Reliability Standard BAL-004-WECC-4 Requirement R4 is as follows:

R4. Each Balancing Authority shall keep its ~~Automatic Time Error Corrections (ATEC)~~ ATEC in service, with an allowable exception

period of less than or equal to an accumulated 24 hours per calendar quarter for ATEC to be out of service. This period is separate from any period during which the Interchange Software was unavailable. *[Violation Risk Factor: Medium] [Time Horizon: Same-day Operations]*

Proposed Regional Reliability Standard BAL-004-WECC-4 revises Requirement R5 to remove the list of operating modes to which a Balancing Authority can change its Automatic Generation Control ("AGC") to correspond with current operating conditions. Removing the list of operating modes eliminates any potential limitation on the kind of operating mode a Balancing Authority may take to meet the operating conditions and would allow a Balancing Authority to change its AGC to any operating mode necessary to meet the operating conditions.

Proposed Regional Reliability Standard BAL-004-WECC-4 Requirement R5 is as follows:

R5. Each Balancing Authority shall be able to change its Automatic Generation Control (AGC) operating mode ~~between Flat Frequency (for blackout restoration); Flat Tie Line (for loss of frequency telemetry); Tie Line Bias; and Tie Line Bias plus Time Error Control (used in ATEC mode),~~ to correspond to current operating conditions. *[Violation Risk Factor: Medium] [Time Horizon: Real-Time Operations]*

Proposed Regional Reliability Standard BAL-004-WECC-4 revises currently effective version of Requirement R4 to become Requirement R6 to specify the ATEC data computed needs to be uploaded to the Interchange Software, as well as specifying how often the data needs to be uploaded. This would ensure that ATEC data is not only calculated but also shared with WECC in a timely manner. Additionally, proposed Requirement R6 updates the legacy term "Net Actual Interchange" with "Actual Net Interchange" to conform with the NERC Glossary term.

Proposed Regional Reliability Standard BAL-004-WECC-4 Requirement R6 is as follows:

R6. Each Balancing Authority shall ~~recalculate the PIIhourly and PIIaccum for the On-Peak and Off-Peak periods whenever adjustments are made to~~ upload hourly ~~Inadvertent~~ Actual Net Interchange (NI_A) to the Interchange Software no later than 50

minutes after each hour. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

Proposed Regional Reliability Standard BAL-004-WECC-4 revises Requirement R7 to specify that, if a Balancing Authority makes a month-end adjustment, that value must be included as a part of the Actual Net Interchange data it submits to the Interchange Software. This would ensure that any month-end adjustment is not only accounted for but also recorded in a timely manner.

Proposed Regional Reliability Standard BAL-004-WECC-4 Requirement R7 is as follows:

R7. Each Balancing Authority ~~shall make the same adjustment to the PIIaccum as it did for any~~ making a month-end ~~meter reading adjustments to Inadvertent~~ adjustment shall input that value as part of its Actual Net Interchange (NI_A). *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

Proposed Regional Reliability Standard BAL-004-WECC-4 revises Requirement R8 to specify that, if a Balancing Authority makes a month-end adjustment, that value must be included in its PIIaccum balance. This would ensure that any month-end adjustment is accurately accounted for.

Proposed Regional Reliability Standard BAL-004-WECC-4 Requirement R8 is as follows:

R8. Each Balancing Authority making a month-end adjustment shall ~~payback~~ ensure that value is added to its accumulated Primary Inadvertent Interchange ~~using ATEC rather than bilateral and unilateral payback~~. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

Additionally, WECC proposes to revise the existing Background section to add additional context regarding the history of WECC's ATEC procedure as well as providing a brief description of what was revised in each previous version of the standard. WECC also proposes to clarify that the proposed Regional Reliability Standard BAL-004-WECC-4 uses the term "ATEC" as defined in the WECC Regional Definitions section of the NERC Glossary.

c. Enforceability of Proposed Reliability Standard

The proposed Regional Reliability Standard includes VRFs and VSLs. The VRFs and VSLs provide guidance on the way the ERO will enforce the requirements of the proposed Reliability Standard. The VRFs and VSLs are substantively unchanged from the currently effective version of the Regional Reliability Standard. As such, they continue to comport with NERC and Commission guidelines related to their assignment.

In addition, the proposed Regional Reliability Standard also includes measures that support each requirement by clearly identifying what is required and how the ERO will enforce the requirement. These measures help ensure that the requirements will be enforced in a clear, consistent, and non-preferential manner and without prejudice to any party.[23] The measures are substantively unchanged from the currently effective version of the Regional Reliability Standard.

V. EFFECTIVE DATE

NERC and WECC respectfully request that the Commission approve the proposed Reliability Standard to become effective as set forth in the proposed Implementation Plan provided in Exhibit B hereto. The proposed Implementation Plan provides that the proposed Reliability Standard shall become effective on the first day of the second quarter following the effective date of the Commission's order approving the proposed Reliability Standard.

As proposed, many of the required tasks of proposed Reliability Standard BAL-004-WECC-4 are already being performed in the same or similar manner as those under the currently effective version of the standard. The new or modified tasks impose a minimal burden achievable in the time window between regulatory approval and the proposed Effective Date.

[23] Order No. 672 at P 327.

VI. CONCLUSION

For the reasons set forth above, NERC and WECC respectfully request that the Commission approve:

- Proposed Regional Reliability Standard BAL-004-WECC-4, and associated elements included in Exhibit A, effective as proposed herein;
- the proposed Implementation Plan included in Exhibit B; and
- the retirement of Regional Reliability Standard BAL-004-WECC-3 effective as proposed herein.

Respectfully submitted,

/s/ Alain Rigaud

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Date: March 12, 2025

Exhibit A

Proposed Regional Reliability Standard

BAL-004-WECC-4 – Automatic Time Error Correction

Exhibit A-1

Proposed Regional Reliability Standard

BAL-004-WECC-4 – Automatic Time Error Correction

(Redline)

A. Introduction

1. **Title:** Automatic Time Error Correction

2. **Number:** BAL-004-WECC-~~3~~4

3. **Purpose:** To maintain Western Interconnection (WI) frequency, and ~~to~~ ensure that ~~Time Error Corrections and~~time error accumulation via Primary Inadvertent Interchange (PII) payback ~~are effectively~~is conducted in a manner that does not ~~adversely affect the~~ result in a negative impact on reliability ~~of the Interconnection.~~.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Balancing Authorities ~~that operate~~operating synchronously ~~in~~within the ~~Western Interconnection.~~WI

5. **Effective Date:** ~~On the~~ The first day of the second quarter~~, after applicable~~ following regulatory approval ~~has been received (or the~~.

6. **Background:**

   Pre-2000 (prior to mandatory Standards), the Western Electricity Coordinating Council (WECC) operated using the Minimum Operating Reliability ~~Standard otherwise becomes~~Criteria (MORC). Per MORC Section D. Time Control, Control Areas were required to assist in maintaining frequency at or near 60.0 Hz, as prescribed in the Western System Coordinating Council (WSCC)[1] Procedure for Time Error Control (PTEC). Various versions of the PTEC predate 1980.

   In February 2003, the WECC Automatic Time Error Correction (ATEC) Procedure (Procedure) became effective ~~the first day of the fourth quarter following~~ for all Balancing Authorities in the WI. The original intent of the Procedure was to minimize the number of manual Time Error Corrections in the WI.[2]

   In June 2007, the Procedure was translated into BAL-STD-004-1, Time Error Correction, followed by BAL-004-WECC-1 through 3, Time Error Correction.[3] BAL-004-WECC-1 required Balancing Authorities within the WI to maintain Interconnection frequency within a predefined frequency profile, and to ensure that Time Error Corrections would not result in a negative impact on Interconnection reliability.

   In September 2009, in response to Federal Energy Regulatory Commission (FERC) Order 723, WECC received Standard Authorization Request (SAR) WECC-0068 requesting

[1] WECC began in 1967 as the Western Systems Coordinating Council (WSCC), a group of 40 power systems with a common goal of providing reliable power to the public whom they served. WECC was founded March 22, 1994.

[2] The Procedure provided for cost assignment and equitable payback of Inadvertent Interchange, not otherwise addressed in BAL-004-4, Time Error Correction.

[3] See Version History Table.

modification of BAL-004-WECC-1. Modifications were effective April 1, 2014, creating BAL-004-WECC-2. BAL-004-WECC-2 introduced two performance metrics: 1) in Requirement R1, a 150% metric, and 2) in Requirement R2, a 90-day metric. Neither of these metrics are supported by technical studies. They were included in BAL-004-WECC-2 as a compromise during drafting.

In May 2018, FERC approved minor revisions to BAL-004-WECC-2 as part of WECC SAR WECC-0124, effective October 1, 2018, creating BAL-004-WECC-3.[4]

In 2023, this Standard was reviewed as part of the WECC SAR WECC-0147. The drafting team noted: 1) Version 3, Requirement R5 migrated from the pre-2000 MORC without initial or subsequent technical support, and 2) R5 addresses capabilities of Automatic Generator Control (AGC) found in no other Standard, without mandating its use or stating how that capability interfaces with ATEC. R5 is retained herein until it can be properly addressed per a NERC ~~Board adoption where regulatory approval is not required).~~Standard Authorization Request.

7. Standard-Only Definition:

7.1 Interchange Software:

This Standard uses the Standard-Only term “Interchange Software” to mean:

The single electronic confirmation tool identified by the Western Electricity Coordinating Council (WECC), or its successor, to be used by all Balancing Authorities throughout the Western Interconnection (WI), that serves as the primary means for confirmation and creation of the final record of Scheduled Net Interchange (NI_S[5]) and Actual Net Interchange (NI_A[6]), during all periods when the Interchange Software is available.

7.2. ATEC:

This Standard uses the term “ATEC” as defined in the WECC Regional Definitions section of the NERC Glossary of Terms Used in Reliability Standards.

[4] FERC Docket No. RD18-2-000. Effective Date October 1, 2018.
[5] Previously called Net Scheduled Interchange
[6] Previously called Net Actual Interchange

B. Requirements and Measures

R1. Each Balancing Authority shall use the Interchange Software as the sole source of data to calculate its ATEC. [Violation Risk Factor: Severe] [Time Horizon: Operations Assessment]

M1. Each Balancing Authority will have evidence that it used the Interchange Software as the sole source of data to calculate its ATEC, as required in Requirement R1.

Evidence may include, but is not limited to production of a corporate attestation or operating procedure indicating use of the Interchange Software as the sole source for calculating ATEC.

R2. Each Balancing Authority shall operate its system such that, ~~following the conclusion of each month,~~ the month-end absolute value of its On-Peak and Off-Peak, ~~Accumulated~~accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the ~~WECC~~ Interchange ~~Tool (WIT) or its successor electronic confirmation tool~~Software, are each individually less than or equal to~~:~~ 150% of the previous calendar year's integrated hourly peak demand where peak demand is total load plus total exports. *[Violation Risk Factor Medium:] [Time Horizon: Operations Assessment]*

2.1. For ~~load-serving~~new Balancing Authorities, ~~150% of the previous calendar year's integrated hourly Peak Demand,~~the peak demand will be the maximum hourly integrated peak demand as it increases during the first year of operation.

~~**1.1** For generation-only Balancing Authorities, 150% of the previous calendar year's integrated hourly peak generation.~~

~~**M1**~~**M2.** Each Balancing Authority will have evidence that it operated its system such that~~,~~ ~~following the conclusion of each month,~~ the month-end absolute value of its On-Peak and Off-Peak, ~~Accumulated~~accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the ~~WECC~~ Interchange ~~Tool (WIT)~~Software, are each individually less than or ~~its successor electronic confirmation tool, meets all criteria stated~~equal to 150% of the previous calendar year's integrated hourly peak demand where peak demand is total load plus total exports, average load in those hours, as calculated by the Interchange Software, per Requirement ~~R1~~R2, or per the exception allowed in R2.1.

~~**R2**~~**R3.** Each Balancing Authority shall, upon discovery of an error in ~~the~~its On-Peak or Off-Peak Inadvertent Interchange calculation ~~of PII_{hourly}~~, recalculate and correct the Inadvertent Interchange values within 90 days~~, the value of PII_{hourly} and adjust the PII_{accum}~~ from the time ~~of~~ the error~~.~~ is discovered. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

~~**M2**. Forms of acceptable~~**M3.** Each Balancing Authority discovering an error in its On-Peak or Off-Peak Inadvertent Interchange calculation will have evidence ~~of compliance with~~that it recalculated and corrected the Inadvertent Interchange values, within 90 days from the time the error is discovered, as required in Requirement ~~R2~~R3.

Evidence may include, but ~~are~~is not limited to ~~any one of the following~~:

- ~~Data, screen~~Screen shots from the ~~WECC~~ Interchange ~~Tool (WIT) or its successor electronic confirmation tool,~~Software;
- ~~Data, screen~~Screen shots from the Balancing Authority's internal ~~Balancing Authority tool, or~~
- ~~Production of data from any other~~software functions such as internal databases, spreadsheets, and displays~~.~~;

- ~~**R3**~~Dated archive files; and
- Historic data.

R4. Each Balancing Authority shall keep ~~its Automatic Time Error Correction (ATEC)~~ATEC in service, with an allowable exception period of less than or equal to an accumulated 24 hours per calendar quarter for ATEC to be out of service. This period is separate from any period during which the Interchange Software was unavailable. *[Violation Risk Factor: Medium] [Time Horizon: Same-day Operations]*

~~**M3. Forms of acceptable**~~**M4.** Each Balancing Authority will have evidence ~~of compliance with~~that it kept ATEC in service as required in Requirement ~~R3~~R4, subject to the allowable exceptions provided.

Evidence may include, but ~~are~~is not limited to:

- ~~Dated archived files,~~
- ~~Historical data,~~
- ~~Other data that demonstrates the ATEC was out of service for less than 24 hours per calendar quarter.~~

~~**R4.** Each Balancing Authority shall compute each of the following using the WECC Interchange Tool (WIT) or its successor electronic confirmation tool, no later than 50 minutes after each hour,~~

~~**4.1.** PII_{hourly};~~

~~**4.2.** PII_{accum};~~

~~**4.3.** Automatic Time Error Correction term (I_{ATEC}).~~

~~*[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*~~

~~**M4.** Forms of acceptable evidence of compliance with Requirement R4 include but are not limited to any one of the following:~~

- ~~Data, screen shots from the WECC Interchange Tool (WIT) or its successor electronic confirmation tool, that demonstrate compliance;~~
- ~~Data, screen~~Screen shots from the Interchange Software;
- Screen shots from ~~internal~~the Balancing ~~Authority tool that demonstrate~~

~~compliance; or,~~

- ~~Data from any other~~Authority's internal software functions such as internal databases, spreadsheets, and displays ~~that demonstrate compliance.~~;

- Dated archive files; and

- Historical data.

R5. Each Balancing Authority shall be able to change its Automatic Generation Control (AGC) operating mode ~~between Flat Frequency (for blackout restoration); Flat Tie-Line (for loss of frequency telemetry); Tie Line Bias; and Tie Line Bias plus Time Error Control (used in ATEC mode),~~ to correspond to current operating conditions. *[Violation Risk Factor: Medium] [Time Horizon: Real-Time Operations]*

M5. ~~Forms of acceptable~~Each Balancing Authority will have evidence ~~of compliance with Requirement~~that its AGC is able to change operating modes to correspond to current operating conditions, as required in R5.

Evidence may include, but ~~are~~is not limited to ~~any one of the following:~~:

- Screen shots from Energy Management System~~,~~; and

- Demonstration using an off-line system.

R6. Each Balancing Authority shall ~~recalculate the PII~~hourly ~~and PII~~accum ~~for the On-Peak and Off-Peak periods whenever adjustments are made to~~ upload hourly ~~Inadvertent~~Actual Net Interchange ~~or ΔTE~~(NI_A) to the Interchange Software no later than 50 minutes after each hour. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M6. ~~Forms of acceptable~~Each Balancing Authority will have evidence ~~of compliance with~~that it uploaded hourly Actual Net Interchange (NI_A) to the Interchange Software no later than 50 minutes after each hour, as required in Requirement R6.

Evidence may include, but ~~are~~is not limited to ~~any one of the following~~:

- ~~Data, screen~~Screen shots from the Interchange Software;

  - ~~Screen~~ shots from the ~~WECC Interchange Tool (WIT) or its successor electronic confirmation tool, that demonstrate compliance;~~

  - ~~Data, screen shots from an~~Balancing Authority's internal ~~Balancing Authority tool that demonstrate compliance with; or,~~

- ~~Data from any other~~ software functions such as internal databases, spreadsheets, and displays ~~that demonstrate compliance.~~;

- Dated archive files; and

- Historical data.

R7. Each Balancing Authority ~~shall make the same adjustment to the PII~~accum ~~as it did for any~~making a month-end ~~meter reading adjustments to Inadvertent~~adjustment shall input that value as part of its Actual Net Interchange~~.~~ (NI_A). *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M7. ~~Forms of acceptable~~ Each Balancing Authority making a month-end adjustment will have evidence ~~of compliance with~~that it input that value as part of its Actual Net Interchange (NI_A), as required in Requirement R7 ~~include but are not limited to any one of the following:~~.

- ~~Data, screen shots from the WECC Interchange Tool (WIT) or its successor electronic confirmation tool, that demonstrate compliance;~~
- ~~Data, screen shots from an internal Balancing Authority tool that demonstrate compliance; or,~~
- ~~Production of data from any other databases, spreadsheets, displays that demonstrate compliance.~~

R8. Each Balancing Authority making a month-end adjustment shall ~~payback~~ensure that value is added to its accumulated Primary Inadvertent Interchange ~~using ATEC rather than bilateral and unilateral payback~~. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M8.

~~M8.~~ ~~Forms of acceptable~~Each Balancing Authority making a month-end adjustment will have evidence ~~of compliance with Requirement R8 include but are not limited~~that the value was added to ~~historical On-Peak and Off-Peak~~its accumulated Primary Inadvertent Interchange ~~data, data from the WECC Interchange Tool, and ACE data.~~, as required in Requirement R8.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority:

~~The Regional Entity shall serve as~~As defined in the NERC Rules of Procedure, "Compliance Enforcement Authority~~.~~

~~For entities that do not work for~~ " means NERC or the Regional Entity~~,~~ in their respective roles of monitoring and enforcing compliance with the ~~Regional Entity shall serve as the Compliance Enforcement Authority.~~

~~For~~NERC Reliability ~~Coordinators and other functional entities that work for their Regional Entity, the ERO or a Regional Entity approved by the ERO and FERC or other applicable governmental authorities shall serve as the Compliance Enforcement Authority~~Standards.

~~For responsible entities that are also Regional Entities, the ERO or a Regional Entity approved by the ERO and FERC or other applicable governmental authorities shall serve as the Compliance Enforcement Authority.~~

~~**1.1 Compliance Monitoring and Assessment Processes:**~~

~~Compliance Audits~~

~~Self-Certifications~~

~~Spot Checking~~

~~Compliance Investigations~~

~~Self-Reporting~~

~~Complaints~~

1.2. Evidence Retention:

The following evidence retention ~~periods~~period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full ~~-~~-time period since the last audit.

~~Each Balancing~~The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority ~~in the Western Interconnection shall~~ to retain specific evidence for a longer period of time as part of an investigation.

- Each Balancing Authority in the WI shall keep the following records for the preceding calendar year (January – December) plus the current calendar year:
  - Its values ~~of~~for PIIhourly, PIIaccum (On-Peak and Off-Peak), ~~Δ~~ΔTE, and any month-end adjustments ~~for the preceding calendar year (January –~~

~~**December), as well as the current calendar year**~~.

- ~~Each Balancing Authority in the Western Interconnection shall retain the amount of time~~ Documentation illustrating any period(s) during which the Balancing Authority operated without ATEC ~~for the preceding calendar year (January – December), as well as the current calendar year.~~, including the reason ATEC was not in operation.

~~1.2 Additional Compliance Information~~

~~None~~

~~**Table of Compliance Elements**~~

1.3 Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	NA	NA	NA	The Balancing Authority failed to use the Interchange Software as the sole source to calculate ATEC.
~~R1~~**R2.**	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 150%, but was less than or equal to 160% of the previous calendar year's ~~Peak Demand~~peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 160%, but was less than or equal to 170% of the previous calendar year's ~~Peak Demand~~peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 170%, but was less than or equal to 180% of the previous calendar year's ~~Peak Demand~~peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 180% of the previous calendar year's ~~Peak Demand~~peak demand or peak generation for generation-only Balancing Authorities.
~~R2~~**R3.**	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 90 days of the discovery of the error; but made the	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 120 days of the discovery of the error; but made the	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 150 days of the discovery of the error; but made the	The Balancing Authority did not recalculate PIIhourly and adjust PIIaccum within 180 days of the discovery of the error.

	required recalculations and adjustments within 120 days.	required recalculations and adjustments within 150 days.	required recalculations and adjustments within 180 days.	
R4.	The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 24 hours, but less than or equal to 72 hours.	The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 72 hours, but less than or equal to 120 hours.	The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 120 hours, but less than or equal to 168 hours.	The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 168 hours.
R5.	N/A	N/A	N/A	The Balancing Authority is not able to change its AGC operating mode to correspond to current operating conditions.
R6.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to two hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to four hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to six hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in more than six hours.
R7.	NA	NA	NA	The Balancing Authority making a month-end adjustment failed to input that value as part of its Net Actual Interchange.
R8.	NA	NA	NA	The Balancing Authority making a month-end

				adjustment failed to add that value to its accumulated Primary Inadvertent Interchange.

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
1	February 4, 2003	Effective Date.	New
1	October 17, 2006	Created Standard from Procedure.	Errata
1	February 6, 2007	Changed the Standard Version from 0 to 1 in the Version History Table.	Errata
1	February 6, 2007	The upper limit bounds to the amount of Automatic Time Error Correction term was inadvertently omitted during the Standard Translation. The bound was added to the requirement R1.4.	Errata
1	February 6, 2007	The statement "The Time Monitor may declare offsets in 0.001-second increments" was moved from TEoffset to TDadj and offsets was corrected to adjustments.	Errata
1	February 6, 2007	The reference to seconds was deleted from the TE offset term.	Errata
1	June 19, 2007	The standard number BAL-STD-004-1 was changed to BAL-004-WECC-01 to be consistent with the NERC Regional Reliability Standard Numbering Convention.	Errata
2	December 19, 2012	Adopted by NERC Board of Trustees.	
2	October 16, 2013	A FERC Letter Order was issued on October 16, 2013, approving BAL-004-WECC-02. This standard will become enforceable on April 1, 2014.	

Version	Date	Action	Change Tracking
3	December 6, 2017	Approved by the WECC Board of Directors.	Five-year review. The project: 1) relocates the Background section to the preamble of the Guidance section, 2) adds On-Peak and Off-Peak parameters in Requirement R1/M1, 3) addresses WECC Interchange Tool software successors throughout, 4) conforms the document to current drafting conventions (R1/M1, R4/M4), and 5) addresses non-substantive syntax and template concerns.
3	February 8, 2018	Adopted by the NERC Board of Trustees.	

~~R #~~	~~Time Horizon~~	~~VRF~~	~~Violation Severity Levels~~			
			~~Lower VSL~~	~~Moderate VSL~~	~~High VSL~~	~~Severe VSL~~

~~R3~~	~~Real-Time Operations~~	~~Medium~~	~~The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 24 hours, but less than or equal to 72 hours.~~	~~The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 72 hours, but less than or equal to 120 hours.~~	~~The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 120 hours, but less than or equal to 168 hours~~	~~The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 168 hours.~~
~~R4~~	~~Operations Assessment~~	~~Medium~~	~~The Balancing Authority did not compute PII_{hourly}, PII_{accum}, and I_{ATEC} within 50 minutes, but made the required calculations in less than or equal to two hours.~~	~~The Balancing Authority did not compute PII_{hourly}, PII_{accum}, and I_{ATEC} within two hours, but made the required calculations in less than or equal to four hours.~~	~~The Balancing Authority did not compute PII_{hourly}, PII_{accum}, and I_{ATEC} within four hours, but made the required calculations in less than or equal to six hours.~~	~~The Balancing Authority did not compute PII_{hourly}, PII_{accum}, and I_{ATEC} within six hours.~~
~~R5~~	~~Real-Time Operations~~	~~Medium~~	~~N/A~~	~~N/A~~	~~N/A~~	~~The Balancing Authority is not able to change its AGC operating mode between Flat Frequency (for blackout restoration; Flat Tie Line (for loss of frequency~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
						telemetry); Tie Line Bias; or Tie Line Bias plus Time Error control (used in ATEC mode).
R6	Operations Assessment	Medium	N/A	N/A	N/A	When making adjustments to hourly Inadvertent Interchange or ΔTE, the Balancing Authority did not recalculate the PII_{hourly} and the $PII_{accum.}$ for the On-Peak and Off-Peak periods.
R7	Operations Assessment	Medium	N/A	N/A	N/A	When making any month-end meter reading adjustments to Inadvertent Interchange, the Balancing Authority did not make the same adjustment to the $PII_{accum.}$

~~R #~~	~~Time Horizon~~	~~VRF~~	~~Violation Severity Levels~~			
			~~Lower VSL~~	~~Moderate VSL~~	~~High VSL~~	~~Severe VSL~~
~~R8~~	~~Operations Assessment~~	~~Medium~~	~~N/A~~	~~N/A~~	~~N/A~~	~~The Balancing Authority paid back Inadvertent Interchange using bilateral and unilateral payback rather than using ATEC.~~

~~**Guidelines and Technical Basis**~~

~~**Background**~~

~~In February 2003, the WECC Automatic Time Error Correction (ATEC) Procedure (Procedure) became effective for all Balancing Authorities in the Western Interconnection. The original intent of the Procedure was to minimize the number of Manual Time Error Corrections in the Western Interconnection. ATEC provides the added benefit of a superior approach over NERC Reliability Standard BAL-004-0 – Time Error Correction for assigning costs and providing for the equitable payback of Inadvertent Interchange. In October 2006, the Procedure became a WECC Criterion. In May 2009, FERC issued Order No.723 that approved Regional Reliability Standard BAL-004-WECC-1 - Automatic Time Error Correction, as submitted by NERC. In addition, the Commission directed WECC to develop several clarifying modifications to BAL-004-WECC-1 using the FERC-approved Process for Developing and Approving WECC Standards. The Effective Date of the BAL-004-WECC-1 standard was July 1, 2009. BAL-004-WECC-1 required Balancing Authorities within the Western Interconnection to maintain Interconnection frequency within a predefined frequency profile and to ensure that Time Error Corrections were effectively conducted in a manner that did not adversely affect the reliability of the Interconnection. In September 2009, WECC received WECC Standards/Regional Criterion Request Form (Request) WECC-0068, which was a request for modification of BAL-004-WECC-1. In July 2010, the chair of the WECC Operating Committee assigned the Request to the Performance Work Group (PWG) for development.~~

~~**Requirement R1:**~~

~~**Premise**: Each~~3	May 30, 2018	FERC Order issued approving BAL-004-WECC-3. Docket No. RD18-2-000. Effective Date October 1, 2018.	
4	March 13, 2024	WECC Board of Directors Approved	This project: 1) expands the existing Background section, 2) creates a Standard-specific definition (Interchange Software); 3) creates a requirement to use the Interchange Software; 4) addresses treatment of Balancing Authorities that do not have a full year of operating data; 5) consolidates and clarifies requirements; and 6) updates the document to NERC's newest templates.

Standard Attachments

Not used.

G. Rationale

Nomenclature Update

To conform to NERC's definitional approach, the legacy term Net Actual Interchange (NAI) was replaced with Actual Net Interchange (NI_A). Net Scheduled Interchange (NSI) was replaced with Scheduled Net Interchange (NI_S). The legacy terms and the updated terms are synonymous.

Requirement R1:

The goal of Requirement R1 is to ensure a consistent ATEC calculation within the WI.

Because ATEC is an automatic process, allowing inconsistent calculation of ATEC will cause imbalance in accumulations.

Requirement R2:

The goal of Requirement R2 is to limit the amount of PII_{accum} that a Balancing Authority can have at the end of each month.

To reach the goal, each Balancing Authority should ensure that the absolute value of its PII_{accum} for both the ~~On-Peak~~on-peak period and the ~~Off-Peak~~off-peak period each individually does not exceed 150% of the previous year's Peak Demand for load-serving Balancing Authorities, and 150% of the previous year's peak generation for generation-only Balancing Authorities. The Balancing Authority is required to keep each PII_{accum} period within the limit. For example, the Balancing Authorities actions may include:

- Identifying and correcting the source of any metering or accounting error(s) and recalculating the hourly Primary Inadvertent Interchange (**PII_{hourly}**) and the PII_{accum} from the time of the error;
- Validating the implementation of ATEC; or
- Setting L_{max} equal to L_{10}.until the PII_{accum} is below the limit in Requirement R1.

~~**Justification:**~~This approach is required because PII_{accum} may grow from month-end adjustments and metering errors, even with the inclusion of I_{ATEC} in the ACE equation.

~~**Goal: To limit the amount of PII_{accum} that a Balancing Authority can have at the end of each month.**~~

~~**Requirement R2:**~~

~~**Premise:**~~ **Requirement R3:**

The goal of Requirement R3 is to promote: 1) the timely correction of errors in the calculation of PII and PII_{accum}, and 2) the accurate, fair, and timely payback of accumulated PII balances.

When a Balancing Authority finds an error in the calculation of its PII, the Balancing Authority needs time to correct the error and recalculate PII and PII_{accum}.

~~**Justification:**~~ Hourly adjustments to hourly Inadvertent Interchange (II) require a recalculation of the corresponding hourly PII value, the corresponding PII_{accum}, and all subsequent PII_{accum} for every hour up to the current hour.

The drafting team selected 90 days as a reasonable amount of time to correct an error and recalculate PII and PII_{accum}, since recalculation of PII and PII_{accum} is not a real-time operations reliability issue. As PII hourly is corrected, then PII_{accum} should be recalculated.

~~**Goal: To**~~**Requirement R4:**

The goal of Requirement R4 is to promote ~~the~~fair and timely ~~correction of errors in the calculation~~payback of ~~PII and~~ PII_{accum}~~.~~ balances by ensuring that ATEC remains in service whenever possible.

~~**Requirement R3:**~~

~~**Premise:**~~ When a Balancing Authority is not participating in ATEC, payback of PII_{accum} is delayed.

~~**Justification:**~~ The limit of 24 hours per quarter discourages a Balancing Authority from withdrawing ATEC participation, for example, for economic gain during selected hours. If the limits were increased to 60 hours, a Balancing Authority could technically withdraw ATEC participation for one hour from Monday to Friday.

~~**Goal**: To promote fair and timely payback of PII_{accum} balances.~~

Requirement ~~R4~~R5:

~~**Premise**: PII_{hourly}, PII_{accum}, and I_{ATEC} should be determined before the next scheduling hour begins.~~

~~**Justification: To promote timely calculations 50 minutes was selected because it is before the next hour ramp begins and permits time**~~A review of NERC Standards conducted by the Version 4 drafting team concluded that this Requirement is best located in a Standard focused on Automatic Generator Control (AGC). However, until an AGC-specific Standard is drafted, the Requirement should not be retired.

The goal of Requirement R5 is to ~~collect~~ensure that AGC has the ~~data and resolve interchange metering values.~~

~~**Goal**: To promote the timely calculation of PII_{hourly}, PII_{accum}, and I_{ATEC}.~~

~~**Requirement R5:**~~
~~**Premise: The ACE equation, and hence the AGC mode, will contain any number of parameters based on system**~~ability to respond to varying operating conditions. ~~**Various AGC modes are identified corresponding to those operating conditions, as well as the specific sets of parameters included in the ACE equation.**~~

Justification: Changing to the proper operating mode, corresponding to current operating conditions, affords proper movement of generating units in response to those conditions. The addition of the ATEC term results in an additional AGC mode and a different set of parameters. The inability to correctly calculate the ATEC term would dictate that AGC not be operated in the ATEC mode.

Goal: To set the AGC mode and calculate ACE in a manner that corresponds to the system operating conditions and to accommodate changes in those conditions.

Requirement R6:

Premise: Not used.

Hourly adjustments to hourly Inadvertent Interchange (II) require a recalculation of the corresponding hourly PII value, the corresponding PII_{accum}, and all subsequent PII_{accum} for every hour up to the current hour.

Justification: As PII_{hourly} is corrected, then PII_{accum} should be recalculated.

Goal: To promote accurate, fair and timely payback of accumulated PII balances.

Requirement R7:

Premise: Month-end meter reading adjustments are made, for example, when a Balancing Authority performs monthly comparisons of recorded month-end Net Actual Interchange (NI_A) values derived from hourly Actual Interchange Telemetered Values against month-end Actual Interchange Register Meter readings.

Justification: Month-end adjustments to II_{accum} are applied as 100% PII_{accum}. 100% was chosen for simplicity to bilaterally assign PII_{accum} to both Balancing Authorities, since the effect of this metering error on system frequency is not easily determined over the course of a month.

Goal: To provide a mechanism by which corresponding month-end II adjustments can be **applied** to PII_{accum}, when such adjustments cannot be attributed to any one hour or series of hours.

Not used.

Requirement R8:

Premise: ATEC includes automatic unilateral payback of Primary Inadvertent Interchange and Secondary Inadvertent Interchange.

Justification: Additional unilateral and bilateral exchanges disturb the balance and distribution between Primary Inadvertent Interchange and Secondary Inadvertent Interchange throughout the Interconnection; thereby stranding Secondary Inadvertent Interchange.

Goal: To not strand Secondary Inadvertent Interchange.

Not used.

~~Version History~~

~~Version~~	~~Date~~	~~Action~~	~~Change Tracking~~
~~1~~	~~February 4, 2003~~	~~Effective Date.~~	~~New~~
~~1~~	~~October 17, 2006~~	~~Created Standard from Procedure.~~	~~Errata~~
~~1~~	~~February 6, 2007~~	~~Changed the Standard Version from 0 to 1 in the Version History Table.~~	~~Errata~~
~~1~~	~~February 6, 2007~~	~~The upper limit bounds to the amount of Automatic Time Error Correction term was inadvertently omitted during the Standard Translation. The bound was added to the requirement R1.4.~~	~~Errata~~
~~1~~	~~February 6, 2007~~	~~The statement "The Time Monitor may declare offsets in 0.001 second increments" was moved from TEoffset to TDadj and offsets was corrected to adjustments.~~	~~Errata~~
~~1~~	~~February 6, 2007~~	~~The reference to seconds was deleted from the TE offset term.~~	~~Errata~~
~~1~~	~~June 19, 2007~~	~~The standard number BAL-STD-004-1 was changed to BAL-004-WECC-01 to be consistent with the NERC Regional Reliability Standard Numbering Convention.~~	~~Errata~~
~~2~~	~~December 19, 2012~~	~~Adopted by NERC Board of Trustees.~~	
~~2~~	~~October 16, 2013~~	~~A FERC Letter Order was issued on October 16, 2013, approving BAL-004-WECC-02. This standard will become enforceable on April 1, 2014.~~	

Version	Date	Action	Change Tracking
3	December 6, 2017	Approved by the WECC Board of Directors.	Five-year review. The project: 1) relocates the Background section to the preamble of the Guidance section, 2) adds On-Peak and Off-Peak parameters in Requirement R1/M1, 3) addresses WECC Interchange Tool software successors throughout, 4) conforms the document to current drafting conventions (R1/M1, R4/M4), and, 5) addresses non-substantive syntax and template concerns.
3	February 8, 2018	Adopted by the NERC Board of Trustees.	
3	May 30, 2018	FERC Order issued approving BAL-004-WECC-3. Docket No. RD18-2-000. Effective Date October 1, 2018.	

Exhibit A-2

Proposed Regional Reliability Standard

BAL-004-WECC-4 – Automatic Time Error Correction

(Clean)

A. Introduction

1. **Title:** Automatic Time Error Correction

2. **Number:** BAL-004-WECC-4

3. **Purpose:** To maintain Western Interconnection (WI) frequency, and ensure that time error accumulation via Primary Inadvertent Interchange (PII) payback is conducted in a manner that does not result in a negative impact on reliability.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Balancing Authorities operating synchronously within the WI

5. **Effective Date:** The first day of the second quarter following regulatory approval.

6. **Background:**

   Pre-2000 (prior to mandatory Standards), the Western Electricity Coordinating Council (WECC) operated using the Minimum Operating Reliability Criteria (MORC). Per MORC Section D. Time Control, Control Areas were required to assist in maintaining frequency at or near 60.0 Hz, as prescribed in the Western System Coordinating Council (WSCC)[1] Procedure for Time Error Control (PTEC). Various versions of the PTEC predate 1980.

   In February 2003, the WECC Automatic Time Error Correction (ATEC) Procedure (Procedure) became effective for all Balancing Authorities in the WI. The original intent of the Procedure was to minimize the number of manual Time Error Corrections in the WI.[2]

   In June 2007, the Procedure was translated into BAL-STD-004-1, Time Error Correction, followed by BAL-004-WECC-1 through 3, Time Error Correction.[3] BAL-004-WECC-1 required Balancing Authorities within the WI to maintain Interconnection frequency within a predefined frequency profile, and to ensure that Time Error Corrections would not result in a negative impact on Interconnection reliability.

   In September 2009, in response to Federal Energy Regulatory Commission (FERC) Order 723, WECC received Standard Authorization Request (SAR) WECC-0068 requesting modification of BAL-004-WECC-1. Modifications were effective April 1, 2014, creating BAL-004-WECC-2. BAL-004-WECC-2 introduced two performance metrics: 1) in Requirement R1, a 150% metric, and 2) in Requirement R2, a 90-day metric. Neither of these metrics are supported by technical studies. They were included in BAL-004-WECC-

[1] WECC began in 1967 as the Western Systems Coordinating Council (WSCC), a group of 40 power systems with a common goal of providing reliable power to the public whom they served. WECC was founded March 22, 1994.

[2] The Procedure provided for cost assignment and equitable payback of Inadvertent Interchange, not otherwise addressed in BAL-004-4, Time Error Correction.

[3] See Version History Table.

2 as a compromise during drafting.

In May 2018, FERC approved minor revisions to BAL-004-WECC-2 as part of WECC SAR WECC-0124, effective October 1, 2018, creating BAL-004-WECC-3.[4]

In 2023, this Standard was reviewed as part of the WECC SAR WECC-0147. The drafting team noted: 1) Version 3, Requirement R5 migrated from the pre-2000 MORC without initial or subsequent technical support, and 2) R5 addresses capabilities of Automatic Generator Control (AGC) found in no other Standard, without mandating its use or stating how that capability interfaces with ATEC. R5 is retained herein until it can be properly addressed per a NERC Standard Authorization Request.

7. Standard-Only Definition:

7.1 Interchange Software:

This Standard uses the Standard-Only term "Interchange Software" to mean:

The single electronic confirmation tool identified by the Western Electricity Coordinating Council (WECC), or its successor, to be used by all Balancing Authorities throughout the Western Interconnection (WI), that serves as the primary means for confirmation and creation of the final record of Scheduled Net Interchange (NI_S[5]) and Actual Net Interchange (NI_A[6]), during all periods when the Interchange Software is available.

7.2. ATEC:

This Standard uses the term "ATEC" as defined in the WECC Regional Definitions section of the NERC Glossary of Terms Used in Reliability Standards.

[4] FERC Docket No. RD18-2-000. Effective Date October 1, 2018.
[5] Previously called Net Scheduled Interchange
[6] Previously called Net Actual Interchange

B. Requirements and Measures

R1. Each Balancing Authority shall use the Interchange Software as the sole source of data to calculate its ATEC. [Violation Risk Factor: Severe] [Time Horizon: Operations Assessment]

M1. Each Balancing Authority will have evidence that it used the Interchange Software as the sole source of data to calculate its ATEC, as required in Requirement R1.

Evidence may include, but is not limited to production of a corporate attestation or operating procedure indicating use of the Interchange Software as the sole source for calculating ATEC.

R2. Each Balancing Authority shall operate its system such that, the month-end absolute value of its On-Peak and Off-Peak, accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the Interchange Software, are each individually less than or equal to 150% of the previous calendar year's integrated hourly peak demand where peak demand is total load plus total exports. *[Violation Risk Factor Medium:] [Time Horizon: Operations Assessment]*

2.1. For new Balancing Authorities, the peak demand will be the maximum hourly integrated peak demand as it increases during the first year of operation.

M2. Each Balancing Authority will have evidence that it operated its system such that the month-end absolute value of its On-Peak and Off-Peak, accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the Interchange Software, are each individually less than or equal to 150% of the previous calendar year's integrated hourly peak demand where peak demand is total load plus total exports, average load in those hours, as calculated by the Interchange Software, per Requirement R2, or per the exception allowed in R2.1.

R3. Each Balancing Authority shall, upon discovery of an error in its On-Peak or Off-Peak Inadvertent Interchange calculation, recalculate and correct the Inadvertent Interchange values within 90 days from the time the error is discovered. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M3. Each Balancing Authority discovering an error in its On-Peak or Off-Peak Inadvertent Interchange calculation will have evidence that it recalculated and corrected the Inadvertent Interchange values, within 90 days from the time the error is discovered, as required in Requirement R3.

Evidence may include, but is not limited to:

- Screen shots from the Interchange Software;
- Screen shots from the Balancing Authority's internal software functions such as internal databases, spreadsheets, and displays;
- Dated archive files; and
- Historic data.

R4. Each Balancing Authority shall keep ATEC in service, with an allowable exception period of less than or equal to an accumulated 24 hours per calendar quarter for

ATEC to be out of service. This period is separate from any period during which the Interchange Software was unavailable. *[Violation Risk Factor: Medium] [Time Horizon: Same-day Operations]*

M4. Each Balancing Authority will have evidence that it kept ATEC in service as required in Requirement R4, subject to the allowable exceptions provided.

Evidence may include, but is not limited to:

- Screen shots from the Interchange Software;
- Screen shots from the Balancing Authority's internal software functions such as internal databases, spreadsheets, and displays;
- Dated archive files; and
- Historical data.

R5. Each Balancing Authority shall be able to change its Automatic Generation Control (AGC) operating mode to correspond to current operating conditions. *[Violation Risk Factor: Medium] [Time Horizon: Real-Time Operations]*

M5. Each Balancing Authority will have evidence that its AGC is able to change operating modes to correspond to current operating conditions, as required in R5.

Evidence may include, but is not limited to:

- Screen shots from Energy Management System; and
- Demonstration using an off-line system.

R6. Each Balancing Authority shall upload hourly Actual Net Interchange (NI_A) to the Interchange Software no later than 50 minutes after each hour. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M6. Each Balancing Authority will have evidence that it uploaded hourly Actual Net Interchange (NI_A) to the Interchange Software no later than 50 minutes after each hour, as required in Requirement R6.

Evidence may include, but is not limited to:

- Screen shots from the Interchange Software;
- Screen shots from the Balancing Authority's internal software functions such as internal databases, spreadsheets, and displays;
- Dated archive files; and
- Historical data.

R7. Each Balancing Authority making a month-end adjustment shall input that value as part of its Actual Net Interchange (NI_A). *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M7. Each Balancing Authority making a month-end adjustment will have evidence that it input that value as part of its Actual Net Interchange (NI_A), as required in Requirement R7.

R8. Each Balancing Authority making a month-end adjustment shall ensure that value is added to its accumulated Primary Inadvertent Interchange. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M8. Each Balancing Authority making a month-end adjustment will have evidence that the value was added to its accumulated Primary Inadvertent Interchange, as required in Requirement R8.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority:

As defined in the NERC Rules of Procedure, "Compliance Enforcement Authority" means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.

1.2. Evidence Retention:

The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- Each Balancing Authority in the WI shall keep the following records for the preceding calendar year (January – December) plus the current calendar year:
  - Its values for PIIhourly, PIIaccum (On-Peak and Off-Peak), ΔTE, and any month-end adjustments.
  - Documentation illustrating any period(s) during which the Balancing Authority operated without ATEC, including the reason ATEC was not in operation.

1.3 Compliance Monitoring and Enforcement Program:

As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	NA	NA	NA	The Balancing Authority failed to use the Interchange Software as the sole source to calculate ATEC.
R2.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 150%, but was less than or equal to 160% of the previous calendar year's peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 160%, but was less than or equal to 170% of the previous calendar year's peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 170%, but was less than or equal to 180% of the previous calendar year's peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 180% of the previous calendar year's peak demand or peak generation for generation-only Balancing Authorities.
R3.	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 90 days of the discovery of the error; but made the required recalculations and adjustments within 120 days.	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 120 days of the discovery of the error; but made the required recalculations and adjustments within 150 days.	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 150 days of the discovery of the error; but made the required recalculations and adjustments within 180 days.	The Balancing Authority did not recalculate PIIhourly and adjust PIIaccum within 180 days of the discovery of the error.
R4.	The Balancing Authority operated during a calendar	The Balancing Authority operated during a calendar	The Balancing Authority operated during a calendar	The Balancing Authority operated during a calendar

	quarter without ATEC in service for more than an accumulated 24 hours, but less than or equal to 72 hours.	quarter without ATEC in service for more than an accumulated 72 hours, but less than or equal to 120 hours.	quarter without ATEC in service for more than an accumulated 120 hours, but less than or equal to 168 hours.	quarter without ATEC in service for more than an accumulated 168 hours.
R5.	N/A	N/A	N/A	The Balancing Authority is not able to change its AGC operating mode to correspond to current operating conditions.
R6.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to two hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to four hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to six hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in more than six hours.
R7.	NA	NA	NA	The Balancing Authority making a month-end adjustment failed to input that value as part of its Net Actual Interchange.
R8.	NA	NA	NA	The Balancing Authority making a month-end adjustment failed to add that value to its accumulated Primary Inadvertent Interchange.

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
1	February 4, 2003	Effective Date.	New
1	October 17, 2006	Created Standard from Procedure.	Errata
1	February 6, 2007	Changed the Standard Version from 0 to 1 in the Version History Table.	Errata
1	February 6, 2007	The upper limit bounds to the amount of Automatic Time Error Correction term was inadvertently omitted during the Standard Translation. The bound was added to the requirement R1.4.	Errata
1	February 6, 2007	The statement “The Time Monitor may declare offsets in 0.001-second increments” was moved from TEoffset to TDadj and offsets was corrected to adjustments.	Errata
1	February 6, 2007	The reference to seconds was deleted from the TE offset term.	Errata
1	June 19, 2007	The standard number BAL-STD-004-1 was changed to BAL-004-WECC-01 to be consistent with the NERC Regional Reliability Standard Numbering Convention.	Errata
2	December 19, 2012	Adopted by NERC Board of Trustees.	
2	October 16, 2013	A FERC Letter Order was issued on October 16, 2013, approving BAL-004-WECC-02. This standard will become enforceable on April 1, 2014.	

Version	Date	Action	Change Tracking
3	December 6, 2017	Approved by the WECC Board of Directors.	Five-year review. The project: 1) relocates the Background section to the preamble of the Guidance section, 2) adds On-Peak and Off-Peak parameters in Requirement R1/M1, 3) addresses WECC Interchange Tool software successors throughout, 4) conforms the document to current drafting conventions (R1/M1, R4/M4), and 5) addresses non-substantive syntax and template concerns.
3	February 8, 2018	Adopted by the NERC Board of Trustees.	
3	May 30, 2018	FERC Order issued approving BAL-004-WECC-3. Docket No. RD18-2-000. Effective Date October 1, 2018.	
4	March 13, 2024	WECC Board of Directors Approved	This project: 1) expands the existing Background section, 2) creates a Standard-specific definition (Interchange Software); 3) creates a requirement to use the Interchange Software; 4) addresses treatment of Balancing Authorities that do not have a full year of operating data; 5) consolidates and clarifies requirements; and 6) updates the document to NERC's newest templates.

Standard Attachments

Not used.

G. Rationale

Nomenclature Update

To conform to NERC's definitional approach, the legacy term Net Actual Interchange (NAI) was replaced with Actual Net Interchange (NI_A). Net Scheduled Interchange (NSI) was replaced with Scheduled Net Interchange (NI_S). The legacy terms and the updated terms are synonymous.

Requirement R1:

The goal of Requirement R1 is to ensure a consistent ATEC calculation within the WI.

Because ATEC is an automatic process, allowing inconsistent calculation of ATEC will cause imbalance in accumulations.

Requirement R2:

The goal of Requirement R2 is to limit the amount of PII_{accum} that a Balancing Authority can have at the end of each month.

To reach the goal, each Balancing Authority should ensure that the absolute value of its PII_{accum} for both the on-peak period and the off-peak period each individually does not exceed 150% of the previous year's Peak Demand for load-serving Balancing Authorities, and 150% of the previous year's peak generation for generation-only Balancing Authorities. The Balancing Authority is required to keep each PII_{accum} period within the limit. For example, the Balancing Authorities actions may include:

- Identifying and correcting the source of any metering or accounting error(s) and recalculating the hourly Primary Inadvertent Interchange **(**PII_{hourly}) and the PII_{accum} from the time of the error;
- Validating the implementation of ATEC; or
- Setting L_{max} equal to L_{10}.until the PII_{accum} is below the limit in Requirement R1.

This approach is required because PII_{accum} may grow from month-end adjustments and metering errors, even with the inclusion of I_{ATEC} in the ACE equation.

Requirement R3:

The goal of Requirement R3 is to promote: 1) the timely correction of errors in the calculation of PII and PII_{accum}, and 2) the accurate, fair, and timely payback of accumulated PII balances.

When a Balancing Authority finds an error in the calculation of its PII, the Balancing Authority needs time to correct the error and recalculate PII and PII_{accum}.

Hourly adjustments to hourly Inadvertent Interchange (II) require a recalculation of the corresponding hourly PII value, the corresponding PII_{accum}, and all subsequent PII_{accum} for every hour up to the current hour.

The drafting team selected 90 days as a reasonable amount of time to correct an error and recalculate PII and PII_{accum}, since recalculation of PII and PII_{accum} is not a real-time operations reliability issue. As PII hourly is corrected, then PIIaccum should be recalculated.

Requirement R4:

The goal of Requirement R4 is to promote fair and timely payback of PII_{accum} balances by ensuring that ATEC remains in service whenever possible.

When a Balancing Authority is not participating in ATEC, payback of PII_{accum} is delayed.

The limit of 24 hours per quarter discourages a Balancing Authority from withdrawing ATEC participation, for example, for economic gain during selected hours. If the limits were increased to 60 hours, a Balancing Authority could technically withdraw ATEC participation for one hour from Monday to Friday.

Requirement R5:

A review of NERC Standards conducted by the Version 4 drafting team concluded that this Requirement is best located in a Standard focused on Automatic Generator Control (AGC). However, until an AGC-specific Standard is drafted, the Requirement should not be retired.

The goal of Requirement R5 is to ensure that AGC has the ability to respond to varying operating conditions.

Requirement R6:

Not used**.**

Requirement R7:

Not used.

Requirement R8:

Not used.

Exhibit B

Implementation Plan

WECC
Electric Reliability and Security for the West

Attachment F
Implementation Plan
WECC-0147
BAL-004-WECC-4 ATEC

Implementation Plan

Overview of Procedure

This is a WECC Regional Reliability Standard (RRS).

On November 23, 2021, WECC received WECC-0147 Standard Authorization Request (SAR) with a specific request to address a defect in BAL-004-WECC-3, Requirement R1, addressing the "previous calendar year" for generating units that had not been in operation for a full calendar year.

On December 7, 2021, the WECC Standards Committee (WSC) approved the SAR, approving/assigning the drafting team on March 22, 2022.

Between August 22, 2022, and July 21, 2023, the project was posted four times for comment. The drafting team considered and addressed each comment before the project was balloted, closing on September 29, 2023, with a 100% affirmative ballot. The WECC Board of Directors (Board) approved the project on March 13, 2024.

Overview of Changes

WECC-0147 BAL-004-WECC-4, Automatic Time Error Correction (ATEC): 1) expands the existing Background section, 2) creates a Standard-specific definition (Interchange Software), 3) creates a requirement to use the Interchange Software, 4) addresses treatment of Balancing Authorities that do not have a full year of operating data, 5) consolidates and clarifies requirements, and 6) updates the document to NERC's newest templates.

Proposed Effective Date

The proposed effective date is the first day of the second quarter following regulatory approval.

Justification

As proposed, many of the required tasks are already being performed in the same or similar manner as those currently approved. The new or modified tasks impose a minimal burden achievable in the time window between regulatory approval and the proposed Effective Date.

Impact on Other Documents

None.

This project: 1) adds a Standard-specific definition, applicable only to this RRS, and 2) clarifies that when used, the term "ATEC" is as defined in the WECC Regional Definitions section of the NERC Glossary of Terms Used in Reliability Standards (Glossary).

Exhibit C

Order No. 672 Criteria

WECC
Electric Reliability and Security for the West

Attachment K
Order 672 Criteria
WECC-0147 BAL-004-WECC-4
Automatic Time Error Correction

Introduction

The North American Electric Reliability Corporation (NERC) is responsible for ensuring that the Reliability Standards, Violation Risk Factors (VRF), Violation Severity Levels (VSL), definitions, Variances, and Interpretations developed by drafting teams are developed in accordance with NERC processes. These standards must also meet NERC's benchmarks for Reliability Standards, as well as criteria for governmental approval.

In Federal Energy Regulatory Commission (FERC) Order No. 672,[1] FERC identified criteria that it will use to analyze proposed Reliability Standards for approval to ensure they are just, reasonable, not unduly discriminatory or preferential, and in the public interest. The discussion below identifies these factors, and explains how the proposed Reliability Standard meets or exceeds the criteria.

For purposes of this filing, the use of the terms Reliability Standard and Standard are synonymous with Regional Reliability Standard, unless otherwise specified.

Designed for a Specific Goal

Proposed Reliability Standards must be designed to achieve a specified reliability goal.

The proposed Reliability Standard must address a reliability concern that falls within the requirements of Section 215 of the Federal Power Act. That is, it must provide for the reliable operation of Bulk-Power System facilities. It may not extend beyond reliable operation of such facilities or apply to other facilities. Such facilities include all those necessary for operating an interconnected electric energy transmission network, or any portion of that network, including control systems. The proposed Reliability Standard may apply to any design of planned additions or modifications of such facilities that is necessary to provide for reliable operation. It may also apply to cybersecurity protection. Order No. 672 at P 321.

Further, NERC Reliability Standards are based on certain reliability principles that define the foundation of reliability for North American bulk power systems. Each Reliability Standard shall enable or support one or more of the reliability principles, thereby ensuring that each standard serves a purpose in support of reliability of the North American bulk power systems. Each Reliability Standard

[1] FERC Order 672

shall also be consistent with all of the reliability principles, thereby ensuring that no standard undermines reliability through an unintended consequence.

This project updates BAL-004-WECC-3, Automatic Time Error Correction (ATEC), resulting in a nomenclature of BAL-004-WECC-4.

Reliability Principle [2]

BAL-002-WECC-4 meets NERC's Reliability Principle #1:

- 1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards."

Purpose

The purpose of the standard is:

- To maintain Western Interconnection (WI) frequency, and ensure that time error accumulation via Primary Inadvertent Interchange (PII) payback is conducted in a manner that does not result in a negative impact on reliability.

Applicability

The standard applies to the following entities:

- Balancing Authorities operating synchronously within the Western Interconnection.

Technically Sound

Proposed Reliability Standards must contain a technically sound method to achieve the goal.

The proposed Reliability Standard must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve this goal. Although any person may propose a topic for a Reliability Standard to the Electric Reliability Organization (ERO), in the ERO's process, the specific proposed Reliability Standard should be developed initially by persons within the electric power industry and community with a high level of technical expertise and be based on sound technical and engineering criteria. It should be based on actual data and lessons learned from past operating incidents, where appropriate. The process for ERO approval of a proposed Reliability Standard should be fair and open to all interested persons. Order No. 672 at P 324.

Technically Sound

Although a technical white paper is not provided with this filing, only proposed Requirement R1 includes new concepts. The remainder of the document reflects existing tasks and concepts. Proposed Requirement R1 requires the applicable entities to use one specified software for purposes of

[2] https://www.nerc.com/pa/Stand/Resources/Documents/Reliability_Principles.pdf

calculating ATEC. By mandating the use of a single piece of software, the output needed for ATEC becomes more standardized.

Applicability

Proposed Reliability Standards must be applicable to users, owners, and operators of the bulk power system, and not others.

The proposed Reliability Standard may impose a requirement on any user, owner, or operator of such facilities, but not on others. Order No. 672 at P 322.

BAL-004-WECC-4 applies to the following entities:

- Balancing Authorities operating synchronously within the Western Interconnection.

The applicable entities have not changed between BAL-004-WECC-3 and BAL-004-WECC-4.

Clear and Unambiguous

Proposed Reliability Standards must be clear and unambiguous as to what is required and who is required to comply.

The proposed Reliability Standard should be clear and unambiguous regarding what is required and who is required to comply. Users, owners, and operators of the Bulk-Power System must know what they are required to do to maintain reliability. Order No. 672 at P 325.

BAL-004-WECC-4 is clear and unambiguous.

The standard specifies: 1) a purpose, 2) designates the entities to which that standard applies, and 3) provides a background section.

The Requirements and Measures section: 1) specifies which entity is required to perform each task, 2) is supported by a Measure indicating that evidence must be available to prove performance of the assigned task, and 3) is augmented by a Rationale section.

Whereas each Requirement is assigned a Violation Risk Factor, each Requirement is also supported by the compliance Violation Severity Table illustrating the potential consequences for failure to comply with the standard.[3]

[3] See the Technically Sound and Applicability sections of this document. See also Attachment H – VSL and VRF Justifications provided with this filing.

Understandable Consequence

Proposed Reliability Standards must include clear and understandable consequences and a range of penalties (monetary and/or non-monetary) for a violation.

The possible consequences, including range of possible penalties, for violating a proposed Reliability Standard should be clear and understandable by those who must comply. Order No. 672 at P 326.

BAL-004-WECC-4 creates a single new Requirement: R1. The assigned Violation Risk Factor (VRF) is "Medium," and the assigned Violation Severity Level (VSL) is "High." Because the balance of the document does not propose any new concepts, the VRF/VSL levels previously assigned to that content has been adopted for BAL-004-WECC-4.[4]

Measurability for Compliance

Proposed Reliability Standards must identify a clear and objective criterion or measure for compliance, so that it can be enforced in a consistent and non-preferential manner.

There should be a clear criterion or measure of whether an entity is in compliance with a proposed Reliability Standard. It should contain or be accompanied by an objective measure of compliance so that it can be enforced and so that enforcement can be applied in a consistent and non-preferential manner. Order No. 672 at P 327.

BAL-004-WECC-4 creates a single new Requirement: R1. The Requirement and associated Measure is as follows:

A. Requirements and Measures

R1. Each Balancing Authority shall use the Interchange Software as the sole source of data to calculate its ATEC. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M1. Each Balancing Authority will have evidence that it used the Interchange Software as the sole source of data to calculate its ATEC, as required in Requirement R1.
Evidence may include, but is not limited to production of a corporate attestation or operating procedure indicating use of the Interchange Software as the sole source for calculating ATEC.

The balance of the standard includes content from Requirements and Measures previously approved.[5]

[4] See Attachment H – VSL and VRF Justifications provided with this filing.
[5] See Attachment I, Mapping Document.

Effective and Efficient

Proposed Reliability Standards should achieve a reliability goal effectively and efficiently - but does not necessarily have to reflect "best practices" without regard to implementation cost.

The proposed Reliability Standard does not necessarily have to reflect the optimal method, or "best practice," for achieving its reliability goal without regard to implementation cost or historical regional infrastructure design. It should however achieve its reliability goal effectively and efficiently. Order No. 672 at P 328.

During the four postings of this project at WECC, no concerns were raised regarding implementation costs.

Lowest Common Denominator

Proposed Reliability Standards cannot be "lowest common denominator," i.e., cannot reflect a compromise that does not adequately protect bulk power system reliability.

The proposed Reliability Standard must not simply reflect a compromise in the ERO's Reliability Standard development process based on the least effective North American practice — the so-called "lowest common denominator" — if such practice does not adequately protect Bulk-Power System reliability. Although the Commission will give due weight to the technical expertise of the ERO, we will not hesitate to remand a proposed Reliability Standard if we are convinced it is not adequate to protect reliability. Order No. 672 at P 329.

BAL-004-WECC-4 maintains the previously approved content but adds a single proposed requirement: R1. In that requirement, the applicable entities are required to use a single, specified software platform. The platform is easily accessible, and the cost is commercially reasonable, as evidenced by the large number of applicable entities already using the product.

Costs

Proposed Reliability Standards may consider costs to implement for smaller entities but not at consequence of less than excellence in operating system reliability.

A proposed Reliability Standard may take into account the size of the entity that must comply with the Reliability Standard and the cost to those entities of implementing the proposed Reliability Standard. However, the ERO should not propose a "lowest common denominator" Reliability Standard that would achieve less than excellence in operating system reliability solely to protect against reasonable expenses for supporting this vital national infrastructure. For example, a small owner or operator of the Bulk-Power System must bear the cost of complying with each Reliability Standard that applies to it. Order No. 672 at P 330.

BAL-004-WECC-4 maintains the previously approved content but adds a single proposed requirement: R1. In that requirement, the applicable entities are required to use a single, specified software platform. The platform is easily accessible, and the cost is commercially reasonable, as evidenced by the large number of applicable entities already using the product.

Continent-wide and Regional Variations

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 area or approach.

A proposed Reliability Standard should be designed to apply throughout the interconnected North American Bulk-Power System, to the maximum extent this is achievable with a single Reliability Standard. The proposed Reliability Standard should not be based on a single geographic or regional model but should take into account geographic variations in grid characteristics, terrain, weather, and other such factors; it should also take into account regional variations in the organizational 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. Order No. 672 at P 331.

In the Order 740 Remand at P4, the Commission states that:

"Reliability Standards that the ERO proposes to the Commission may include Reliability Standards that are proposed to the ERO by a Regional Entity… When the ERO reviews a regional Reliability Standard that would be applicable on an interconnection-wide basis and that has been proposed by a Regional Entity organized on an interconnection-wide basis, the ERO must rebuttably presume that the regional Reliability Standard is just, reasonable, not unduly discriminatory or preferential, and in the public interest. In turn, the Commission must give "due weight" to the technical expertise of the ERO and of a Regional Entity organized on an interconnection-wide basis."

Further, regional entities may propose Regional Reliability Standards that set more stringent reliability requirements than the NERC Reliability Standard or cover matters not covered by an existing NERC Reliability Standard. NERC Rules of Procedure, Section 312, Regional Reliability Standards.

BAL-004-WECC-4 addresses calculation of ATEC specifically within the Western Interconnection. There are no continent-wide Standards using the more granular calculation approach specified in the proposed standard.

No Undue Negative Effect

Proposed reliability standards should cause no undue negative effect on competition or restriction of the grid.

As directed by section 215 of the FPA, the Commission itself will give special attention to the effect of a proposed Reliability Standard on competition. The ERO should attempt to develop a proposed Reliability Standard that has no undue negative effect on competition. Among other possible considerations, a proposed Reliability Standard should not unreasonably restrict available transmission capability on the Bulk-Power System beyond any restriction necessary for reliability and should not limit use of the Bulk-Power System in an unduly preferential manner. It should not create an undue advantage for one competitor over another. Order No. 672 at P 332.

The assigned drafting team does not foresee any negative impacts on competition resulting from the proposed standard.

BAL-004-WECC-4 was posted for comment on four occasions at WECC. No cost issues were raised in those four postings. However, in the single NERC 45-day posting, Berkshire Hathway and NV Energy raised concerns that the proposed standard may have an adverse impact on reliability or commerce in a neighboring region or interconnection. (See NERC 45-day Response to Comments provided with this filing).

The drafting team responded as follows:

> "Although [Berkshire and NV Energy opine] that the proposed standard poses "an adverse impact to reliability or commerce in a neighboring region or interconnection," [neither entity specified] any concerns here nor [did they] raise any concerns during the estimated 21 public meetings during which the standard was developed, nor the mandatory Standards Briefing prior to balloting.
>
> The record shows that [neither entity entered] the Ballot Pool nor engage[d] the WSC or WECC Board of Directors regarding this project.
>
> As such, [neither Berkshire nor NV] has…provided the DT with anything to address."

No changes were made in response to the comments provided by Berkshire or NV.

Implementation of New Requirements (Effective Date)

The implementation time for the proposed Reliability Standards must be reasonable.

In considering whether a proposed Reliability Standard is just and reasonable, the Commission will consider also the timetable for implementation of the new requirements, including how the proposal balances any urgency in the need to implement it against the reasonableness of the time allowed for

those who must comply to develop the necessary procedures, software, facilities, staffing or other relevant capability. Order No. 672 at P 333.

Proposed Effective Date[6]

The proposed effective date is the first day of the second quarter following regulatory approval.

Justification

As proposed, many of the required tasks are already being performed in the same or similar manner as those currently approved. The new or modified tasks impose a minimal burden achievable in the time window between regulatory approval and the proposed Effective Date.

Fair and Open Process

The Reliability Standard development process must be open and fair.

Further, in considering whether a proposed Reliability Standard meets the legal standard of review, we will entertain comments about whether the ERO implemented its Commission-approved Reliability Standard development process for the development of the particular proposed Reliability Standard in a proper manner, especially whether the process was open and fair. However, we caution that we will not be sympathetic to arguments by interested parties that choose, for whatever reason, not to participate in the ERO's Reliability Standard development process if it is conducted in good faith in accordance with the procedures approved by the Commission. Order No. 672 at P 334.

BAL-004-WECC-4 was developed using the WECC Reliability Standards Development Procedures (Procedures) approved by FERC in effect at the time of each step in the process.

In accordance with the Procedures

1) All drafting team meetings are open to the public.
2) All drafting team meetings were announced via the WECC Standards Email List for the period prescribed in the Procedures.
3) Notice of the meetings was provided to NERC and posted on the WECC Calendar.
4) All meetings were supported by a telephone conference bridge associated with an online internet visual capability allowing all participants to see the document(s) as they were being developed. Further, this team held an open-mic Standards Briefing before balloting, which afforded the industry an additional opportunity to have its questions addressed.

BAL-004-WECC-4 is the result of approximately 21 publicly noticed and convened meetings during which the public was invited to comment on the project.

[6] See Attachment F Implementation Plan provided with this filing.

On December 7, 2021, the WECC Standards Committee (WSC) reviewed and approved the WECC-0147 BAL-004-WECC-4, Automatic Time Error Correction (ATEC) Standard Authorization Request (SAR), at the duly noticed public meeting.

Per the WSC's request, WECC solicited and the WSC approved a standards drafting team (DT).

Thes project was posted for public comment on four occasions at WECC, prior to a single 45-day posting at NERC, resulting from 16 publicly noticed drafting team meetings. The drafting team meetings were augmented by a publicly noticed WECC Standards Briefing, held prior to opening a WECC ballot.

(For dates, see Attachment E, Project Roadmap, provided with this filing.)

After reaching a 100% quorum: 1) this project's publicly solicited Ballot Pool approved this project with a 100% affirmative ballot, 2) the WSC publicly vetted its decision to approve the Procedural machinations of this project, 3) and the WECC Board of Directors publicly approved the project for further regulatory review at NERC/FERC.

All of these forums are public; public comment was invited in every forum.

Balanced with Other Vital Interests

Proposed Reliability Standards must balance with other vital public interests.

Finally, we understand that at times development of a proposed Reliability Standard may require that a particular reliability goal must be balanced against other vital public interests, such as environmental, social and other goals. We expect the ERO to explain any such balancing in its application for approval of a proposed Reliability Standard. Order No. 672 at P 335.

Neither WECC nor the drafting team is aware of any other vital public interests.

However, in the NERC 45-day posting provided with this filing, although:

> "NV Energy opines that the proposed standard poses "a serious and substantial threat to public health, safety, welfare, or national security," NV [did] not specify any concerns…nor did NV raise any concerns during the estimated 21 public meetings during which the standard was developed, nor the mandatory Standards Briefing prior to balloting.
>
> The record shows that NV did not enter into the Ballot Pool nor engage the WSC or WECC Board of Directors regarding this project.
>
> As such, NV does not provide the DT with anything to address."

No changes were made in response to NV Energy's conclusory statement.

Consideration of Other Facts

Proposed Reliability Standards must consider any other relevant factors.

In considering whether a proposed Reliability Standard is just and reasonable, [FERC] will consider [several] general factors, as well as other factors that are appropriate for the particular Reliability Standard proposed. Order No. 672 at P 323.

Neither WECC nor the drafting team raises any further concern.

Exhibit D

Analysis of Violation Risk Factors and Violation Security Levels

WECC
Electric Reliability and Security for the West

Attachment H
VSL and VRF Justification
WECC-0147 ATEC

VSL and VRF Justification - Proposed

Although portions of the standard have been rearranged and redrafted for clarity,[1] the project only proposes one new requirement.

For BAL-002-WECC-4, Automatic Time Error Correction, Requirement R1, the proposed VRF is "Medium," matching the rest of the document.[2] The proposed VSL is "Severe" as the required task is binary.[3]

The VSLs and VRFs as previously approved were adopted for this project.

Proposed Requirement R1

R #	Violation Severity Levels			
	Lower VSL	**Moderate VSL**	**High VSL**	**Severe VSL**
R1.	NA	NA	NA	The Balancing Authority failed to use the Interchange Software as the sole source to calculate ATEC.

[1] See Attachment I Mapping Document.

[2] NERC Violation Risk Factors. https://www.nerc.com/pa/Stand/Resources/Documents/Violation_Risk_Factors.pdf

[3] NERC Violation Severity levels. https://www.nerc.com/pa/Stand/Resources/Documents/VSL_Guidelines.PDF

Exhibit E

Summary of Development History and Complete Record of Development

WECC
Electric Reliability and Security for the West

Attachment E
Project Roadmap
WECC-0147
BAL-004-WECC-4 ATEC

Project Roadmap

Actions		Completed
1.	Standard Authorization Request (SAR) Filed	November 23, 2021
2.	WECC Standards Committee (WSC) approved the SAR	December 7, 2021
3.	Drafting Team (DT) Solicitation	January 26, 2022
4.	Drafting Team (DT) Solicitation – Reminder	February 9, 2022
5.	WSC approves a Drafting Team	March 22, 2022
6.	DT Meeting	May 5, 2022
7.	DT Meeting	May 19, 2022
8.	DT Meeting	June 2, 2022
9.	DT Meeting	June 16, 2022
10.	DT Meeting	June 30, 2022
11.	DT Meeting	August 4, 2022
12.	Posting 1 Open	August 22, 2022
13.	Posting 1 Closed	September 21, 2022
14.	DT Meeting	October 6, 2022
15.	DT Meeting	October 20, 2022
16.	DT Meeting	November 17, 2022
17.	DT Meeting	December 1, 2022
18.	Posting 2 Open	December 12, 2022
19.	Posting 2 Closed	January 11, 2023

20.	DT Meeting	January 26, 2023
21.	DT Meeting	March 23, 2023
22.	DT Meeting	March 30, 2023
23.	Posting 3 Open	April 6, 2023
24.	Posting 3 Closed	May 8, 2023
25.	DT Meeting	June 8, 2023
26.	DT Meeting	June 15, 2023
27.	Posting 4 Open	June 21, 2023
28.	Posting 4 Closed	July 21, 2023
29.	DT Meeting	July 27, 2023
30.	WSC Approved for Ballot	August 9, 2023
31.	Ballot Pool Open	August 21, 2023
32.	Ballot Pool Closed	September 6, 2023
33.	Standards Briefing	September 13, 2023
34.	Ballot Open	September 14, 2023
35.	Ballot Closed	September 29, 2023
36.	WSC Approved for WECC Board of Director (Board) Disposition	December 5, 2023
37.	WECC Board Approved for NERC/FERC Filing	March 13, 2024
38.	NERC 45-Day Comment – Open	April 10, 2024
39.	NERC 45-Day Comment – Closed	May 28, 2024
40.	DT Meeting	June 27, 2024
41.	WSC Review of NERC Proposed Non-Substantive Changes	TDB
42.	NERC Board of Trustees Approved	TDB
43.	FERC Approved	TDB

Black, Shannon

From: support@wecc.org
Sent: Tuesday, 23 November, 2021 3:22 PM
To: Black, Shannon
Cc: Black, Shannon

[Submitted by sblack@wecc.biz]
This message was created by a Microsoft InfoPath form. The form data may be included as an attachment.

Standard Authorization Request - Submitted

Your Standard Authorization Request (SAR) has been successfully submitted.

The SAR will be provided to the WECC Standards Committee (WSC) for review at the next scheduled WSC meeting.

The WSC will determine whether the SAR is within the scope of WECC's authority and activities, and is appropriate for development. Public comment on the SAR will be reviewed and considered by the WSC during a duly noticed WSC meeting prior to the WSC approving the SAR.

W. Shannon Black JD
WECC Consultant, Standards Processes
(503) 307-5782
www.wecc.org

WECC
Electric Reliability and Security for the West

Attachment A
Standard Authorization Request
WECC-0147
BAL-004-WECC-4 ATEC

Overview

This Standard Authorization Request (SAR) was received November 23, 2021, input into the WECC software system on November 23, 2021, and deemed complete on November 23, 2021. The WECC Standards Committee (WSC) vetted this SAR on December 7, 2021.

This SAR is converted and edited from its original ".aspx." format into ".docx." The original can be provided on request. If you have questions regarding this SAR, please contact W. Shannon Black at (503) 307-5782.

Introduction

Provide a brief overview of what you wish to accomplish.

This is a request to modify BAL-004-WECC-3, Automatic Time Error Correction (ATEC). (The resultant numbering will be BAL-004-WECC-4.) During the course of this modification, the assigned drafting team will also be asked to review the entire document thereby meeting the five-year review requirement of the WECC Reliability Standards Development Procedures.[1]

Requester Information

Provide your contact information and your alternate's contact information:

Primary contact

- First name: W. Shannon
- Last name: Black
- Email: sblack@wecc.org
- Phone: (503) 307-5782
- Organization name: Western Electricity Coordinating Council (WECC)

Alternate

- First name: Steven
- Last name: Rueckert

[1] Per the WECC Reliability Standards Development Procedures, Maintenance of RRSs and CRTs: 'The WSC shall ensure that each (Regional Reliability Standard (RRS)) is reviewed at least once every five years from the effective date of the most recent version of the document under review. If the review identifies needed changes, the WSC shall cause a remedial SAR to be filed. If the review does not identify needed changes, no further action is required."

- Email: srueckert@wecc.org
- Phone: (801) 883-6878
- Organization name: Western Electricity Coordinating Council (WECC)

Type of Request

Specify the type of request: (Select one.)

This is a request to modify a WECC Regional Reliability Standard (RRS). This request also fulfils the mandated five-year review.

Create, Modify, Retire or Review a Document

Provide information for your request to create, modify, retire or review the document.

Pick from the dropdown provided in the online form.

Requested Action *(Select one.)*

- This is a request to modify a WECC Regional Reliability Standard (RRS). This request also fulfils the mandated five-year review.

Document Type (Select one)

- WECC Regional Reliability Standard (RRS)

Issue(s)

Specify what industry problem this request is trying to resolve.

Lack of Historic Data to Establish Compliance

BAL-004-WECC-3, Requirement R1 establishes limits on Accumulated Primary Inadvertent Interchange (PII_{ACCUM}). However, these limits are based on a value determined from the "previous calendar year." While the creation of a new Balancing Authority (BA) or the shutdown of an existing Balancing Authority is rare, it has occurred and could occur again.

If that occurs and a BA does not have data from a previous calendar year, the subparts of the Requirements as written would establish a compliance limit of zero (0) MWh.

Maintaining a monthly PII_{ACCUM} Balance of zero as calculated by the Western Interchange Tool (WIT) is not operationally feasible. This can result in non-compliance with the Standard which cannot be mitigated until the end of the calendar year by allowing the limit for PII_{ACCUM} to increase as specified in Requirement R1, 1.1 or 1.2 of the Standard.

Five-year Review

This request meets the five-year review mandate of the Procedures.

Retirement and Structure

The assigned drafting team should consider whether BAL-004-WECC-3 should be retired in whole or in part and whether any portions of the Standard should be relocated/appended to an existing NERC Standard as a WECC Regional Variance.[2] Further, because much of the WECC Regional Reliability Standard's (RRS) content stems from pre-2007 business practices, the Standard should be reviewed to determine which portions (if any) are business related as opposed to reliability related. With that determination made, any business-related content should be retired from the Standard and provided to the North American Energy Standards Board (NAESB) for disposition, subject to NERC/FERC disposition.

Of the Standard's eight Requirements, the stated "goal" of: 1) R1, R2, R4, and R6 is timely accounting, and 2) R2 and R6 is equity. (See Version 3, Guidelines and Technical Basis of the Standard)

In making a recommendation to keep or retire all or part of BAL-004-WECC-3, the assigned drafting team should weigh whether the primary impact of each Requirement adds reliability to the Interconnection or whether the Requirement's primary impact is commercial and/or accounting in nature. Where a Requirement is found to primarily target accounting, equity, or commercial activity, its retirement should be considered.

In making its recommendation, the drafting team should also consider whether the Standard's Requirements are properly located as a free-standing WECC Regional Relibaility Standard or whether its Requirements should be appended to an existing NERC Standard as a Regional Variance. For example, if the review concludes that Requirements R1, R2, R4, and R6 should be retired, the remaining operational Requirements may better serve as a WECC Regional Variance.

Proposed Remedy(ies)

Specify how this request will address the issue you stated above.

Lack of Historic Data and Specific Language Concerns

The proposed remedial language is intended to address and establish a valid and reasonable PII_{ACCUM} limit where no data is available from the previous calendar year. The proposed remedial language addresses the

[2] Of note, the ATEC approach is not used anywhere else within NERC indicating it may not be essential to reliability. Further, NERC's parallel Standard, BAL-004-01 Time Error Correction, has been inactive since 2017.

start-up of a new BA, a BA footprint change, as well as the operational restart of a generation-only BA after being shut down for a period greater than one calendar year.

Existing Language

R1. Each Balancing Authority shall operate its system such that, following the conclusion of each month, the month-end absolute value of its On-Peak and Off-Peak, Accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the WECC Interchange Tool (WIT) or its successor electronic confirmation tool, are each individually less than or equal to:

1.1 For load-serving Balancing Authorities, 150% of the previous calendar year's integrated hourly Peak Demand,

1.2 For generation-only Balancing Authorities, 150% of the previous calendar year's integrated hourly peak generation.

Proposed Remedial Language (R1)

1.1 For load-serving Balancing Authorities, the greater of 150% of the previous calendar year's integrated hourly Peak Demand or 100% of the integrated hourly Peak Demand during the current calendar year.

1.2 For generation-only Balancing Authorities, the greater of 150% of the previous calendar year's integrated hourly peak generation or the total nameplate capability of the generation within the Balancing Authority.

Applicable Entities

Each function will be reviewed if affected. A dropdown will be provided. Check all applicable blocks.

"4. Applicability

4.1. Functional Entities

4.1.1 Balancing Authorities that operate synchronously in the Western Interconnection."

Detailed Description

Use this block to elaborate on anything that might have been missed above or to provide greater granularity.

This request will review and update the entire document, as needed.

This SAR takes no position on the retirement, structure, forum, or placement of the document. It only calls for the drafting team to review those issues as part of the five-year review.

Affected Reliability Principles

Which of the following reliability principles is MOST affected by this request? (Select one.)

Check the appropriate block that is provided on the online form. You need to select one of the NERC Reliability Principles that apply.

For example:

- **Reliability Principle 1** — Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.

Document Information

Specify the document title, document number, and affected section regarding the request.

See above.

Reference Uploads

Please reference or upload any affected standards, regional business practices, criteria, policies, white papers, technical reports, or other relevant documents. If this request is based on a conflict of law, please include a copy of—or accessible reference to—the specific law or regulatory mandate in conflict.

Provide Additional Comments (if needed).

NA

Black, Shannon

From: Black, Shannon
Sent: Wednesday, 26 January, 2022 11:09 AM
Subject: WECC-0147 BAL-004-WECC-4 Drafting Team Solicitation

WECC-0147 BAL-004-WECC-4 Drafting Team Solicitation

Drafting Team nominations are being solicited for the following project:

- WECC-0147, BAL-004-WECC-4 — Automatic Time Error Correction

In addition to a five-year review, this project seeks to correct existing language to remedy compliance concerns. The Standard Authorization Request can be reviewed here.

If you have an interest in participating on this drafting team, please submit a "DT Nomination Form" found on the Standards Under Development Page. From the Tracking Number drop down menu, please select "WECC-0147."

Nominations will be addressed at the next scheduled WECC Standards Committee (WSC) meeting.

W. Shannon Black, JD
WECC Consultant, Standards Processes
(503) 307-5782
sblack@wecc.org

Black, Shannon

From: Black, Shannon
Sent: Wednesday, 9 February, 2022 11:35 AM
Subject: Notice of Drafting Team Solicitation WECC-0146 and WECC-0147

Drafting Team Solicitation WECC-0146 and WECC-0147

The WECC Standards Committee (WSC) is seeking additional drafting team nominations for the following two projects:

- WECC-0146 TPL-001-WECC-CRT-4 Transmission System Planning Performance
- WECC-0147 BAL-004-WECC-3, ATEC Five-year Review with Focus on R1

In addition to the general request for nominees, this solicitation carries a specific call for nominees that served in developing previous versions of these documents.

If you would like to be considered for assignment to either of these teams, please fill out a Drafting Team Nomination Form located on the Standards Under Development page.

W. Shannon Black, JD
WECC Consultant, Standards Processes
(503) 307-5782
sblack@wecc.org

Black, Shannon

From: Black, Shannon
Sent: Thursday, March 30, 2023 4:45 PM
Subject: WECC-0147 BAL-004-WECC-4, ATEC Posting 3 Posted for Comment

WECC-0147 BAL-004-WECC-4, ATEC Posting 3 Posted for Comment

On March 30, 2023, the WECC-0147, BAL-004-WECC-4, Automatic Time Error Correction (ATEC) Drafting Team (DT) agreed to post Posting 3 for a 30-day comment period. Once the comment period opens, comments can be submitted by selecting the Submit and Review Comments accordion on the WECC-0147 homepage. Then, click Submit Responses to Posting 3.

The posting period will open April 6, 2023, and close May 8, 2023.

The DT will meet on May 18, May 25, and June 8, 2023, to address comments received.

Posting 3 covers only Sections A-C. The remaining portions of the document will be addressed as Requirements draw nearer to completion.

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WECC Consultant, Standards Processes
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Black, Shannon

From: NERC Standards Announcements (Do Not Reply) (SM) <NERC-StandardsAnnouncements-DoNotReply@nerc.net>
Sent: Wednesday, April 10, 2024 8:28 AM
To: Wendy Muller
Cc: Kimberlin Harris
Subject: Regional Reliability Standards Announcement – Western Electricity Coordinating Council | BAL-004-WECC-4 Comment Period Open through May 28, 2024

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Regional Reliability Standards Announcement

Western Electricity Coordinating Council BAL-004-WECC-4

Comment Period Open through September 29, 2023

Now Available

The Western Electricity Coordinating Council (WECC) requested that NERC post **Regional Reliability Standard BAL-004-WECC-4 (Automatic Time Error Correction)** for industry review and comment in accordance with the NERC Rules of Procedure. Comments must be submitted by **8 p.m. Eastern, Tuesday, May 28, 2024.**

Background

Proposed Regional Reliability Standard BAL-004-WECC-4 – Automatic Time Error Correction modifies the current effective regional standard BAL -004-WECC-3 as follows:

- Expanding the existing Background section
- Creating a Standard-specific definition (Interchange Software)
- Creating a requirement to use the Interchange Software
- Addressing treatment of Balancing Authorities that do not have a full year of operating data
- Consolidating and clarifying requirements

- Updating the documents to NERC's newest templates
- Adding a Standard-specific definition, applicable only to this RRS
- Clarifying that when used, the term "ATEC" is as defined in the WECC Regional Definitions section of the NERC Glossary of Terms Used in Reliability Standards (Glossary)

The WECC Board of Directors approved the proposed regional standard on March 13, 2024.

Commenting

Use the Standards Balloting and Commenting System (SBS) to submit comments. An unofficial Word version of the comment form is posted on the Regional Reliability Standards Under Development page.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*
- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Regional Reliability Standards Development Process

Section 300 of NERC's Rules of Procedures of the Electric Reliability Organization governs the regional reliability standards development process. Although the technical aspects of this Regional Reliability Standard have been vetted through WECC Regional Standards development process, the final approval process for a Regional Reliability Standard requires NERC publicly to notice and request comment on the criteria outlined in the unofficial comment form.

Documents and information about this project are available on the Western Electricity Coordinating Council (WECC) Standards page.

For more information or assistance, contact Reliability Standards Analyst, Kimberlin Harris (via email) or at 404-446-9794.

3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

WECC
Electric Reliability and Security for the West

Attachment I
Mapping Document

WECC-0147
BAL-004-WECC-4 ATEC

Mapping Document

As-Proposed (New)	As-Approved (Old)	Comment
R1		This is a new Requirement.
R2	R1	Improved readability
R3	R2 and R6	Improved readability; includes a requirement to correct errors. As-approved R2 and R6 are consolidated into As-proposed R3.
R4	R3	Improved readability. Clarifying sentence has been added addressing Interchange Software unavailability.
R5	R5	Eliminates superfluous list in favor of responding to current operating conditions.
R6	R4	Shifts the task from computing to uploading (Computing is assumed as the upload cannot occur without the computation.)
R7	R7	Improved readability
R8	R8	Eliminates proscriptions in favor of ensuring values are correct.

NERC Posting – Record of Development

(1) Redline
(2) Info

BAL-004-WECC-4

(3) Clean | **(4)** Redline to Last Approved

(5) Implementation Plan

(6) Unofficial Comment Form (Word)

Submit Comments

(7) Comments Received

(8) Consideration of Comments

A. Introduction

1. **Title:** Automatic Time Error Correction

2. **Number:** BAL-004-WECC-4

3. **Purpose:** To maintain Western Interconnection (WI) frequency, and ensure that time error accumulation via Primary Inadvertent Interchange (PII) payback is conducted in a manner that does not result in a negative impact on reliability.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Balancing Authorities operating synchronously within the WI

   ~~**4.2. Compliance Waiver:**~~

   ~~**4.2.1.** See Section C., Compliance, 1.4 Compliance Waiver, for applicability during periods of Interchange Software unavailability.~~

5. **Effective Date:** The first day of the second quarter following regulatory approval.

6. **Background:**

   Pre-2000 (prior to mandatory Standards), the Western Electricity Coordinating Council (WECC) operated using the Minimum Operating Reliability Criteria (MORC). Per MORC Section D. Time Control, Control Areas were required to assist in maintaining frequency at or near 60.0 Hz, as prescribed in the Western System Coordinating Council (WSCC)[1] Procedure for Time Error Control (PTEC). Various versions of the PTEC predate 1980.

   In February 2003, the WECC Automatic Time Error Correction (ATEC) Procedure (Procedure) became effective for all Balancing Authorities in the WI. The original intent of the Procedure was to minimize the number of manual Time Error Corrections in the WI.[2]

   In June 2007, the Procedure was translated into BAL-STD-004-1, Time Error Correction, followed by BAL-004-WECC-1 through 3, Time Error Correction.[3] BAL-004-WECC-1 required Balancing Authorities within the WI to maintain Interconnection frequency within a predefined frequency profile, and to ensure that Time Error Corrections would not result in a negative impact on Interconnection reliability.

   In September 2009, in response to Federal Energy Regulatory Commission (FERC) Order 723, WECC received Standard Authorization Request (SAR) WECC-0068 requesting modification of BAL-004-WECC-1. Modifications were effective April 1, 2014, creating

[1] WECC began in 1967 as the Western Systems Coordinating Council (WSCC), a group of 40 power systems with a common goal of providing reliable power to the public whom they served. WECC was founded March 22, 1994.

[2] The Procedure provided for cost assignment and equitable payback of Inadvertent Interchange, not otherwise addressed in BAL-004-4, Time Error Correction.

[3] See Version History Table.

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In May 2018, FERC approved minor revisions to BAL-004-WECC-2 as part of WECC SAR WECC-0124, effective October 1, 2018, creating BAL-004-WECC-3.[4]

In 2023, this Standard was reviewed as part of the WECC SAR WECC-0147. The drafting team noted: 1) Version 3, Requirement R5 migrated from the pre-2000 MORC without initial or subsequent technical support, and 2) R5 addresses capabilities of Automatic Generator Control (AGC) found in no other Standard, without mandating its use or stating how that capability interfaces with ATEC. R5 is retained herein until it can be properly addressed per a NERC Standard Authorization Request.

7. Standard-Only Definition:

7.1 Interchange Software:

This Standard uses the Standard-Only term “Interchange Software” to mean:

The single electronic confirmation tool identified by the Western Electricity Coordinating Council (WECC), or its successor, to be used by all Balancing Authorities throughout the Western Interconnection (WI), that serves as the primary means for confirmation and creation of the final record of Scheduled Net Interchange (NI_S[5]) and Actual Net Interchange (NI_A[6]), during all periods when the Interchange Software is available.

7.2. ATEC:

This Standard uses the term “ATEC” as defined in the WECC Regional Definitions section of the NERC Glossary of Terms Used in Reliability Standards.

[4] FERC Docket No. RD18-2-000. Effective Date October 1, 2018.
[5] Previously called Net Scheduled Interchange
[6] Previously called Net Actual Interchange

B. Requirements and Measures

R1. Each Balancing Authority shall use the Interchange Software as the sole source of data to calculate its ATEC. [Violation Risk Factor: Severe] [Time Horizon: Operations Assessment]

M1. Each Balancing Authority will have evidence that it used the Interchange Software as the sole source of data to calculate its ATEC, as required in Requirement R1.

Evidence may include, but is not limited to production of a corporate attestation or operating procedure indicating use of the Interchange Software as the sole source for calculating ATEC.

R2. Each Balancing Authority shall operate its system such that, the month-end absolute value of its On-Peak and Off-Peak, accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the Interchange Software, are each individually less than or equal to 150% of the previous calendar year's integrated hourly peak demand where peak demand is total load plus total exports. *[Violation Risk Factor Medium:] [Time Horizon: Operations Assessment]*

2.1. For new Balancing Authorities, the peak demand will be the maximum hourly integrated peak demand as it increases during the first year of operation.

M2. Each Balancing Authority will have evidence that it operated its system such that the month-end absolute value of its On-Peak and Off-Peak, accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the Interchange Software, are each individually less than or equal to 150% of the previous calendar year's integrated hourly peak demand where peak demand is total load plus total exports, average load in those hours, as calculated by the Interchange Software, per Requirement R2, or per the exception allowed in R2.1.

R3. Each Balancing Authority shall, upon discovery of an error in its On-Peak or Off-Peak Inadvertent Interchange calculation, recalculate and correct the Inadvertent Interchange values within 90 days from the time the error is discovered. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M3. Each Balancing Authority discovering an error in its On-Peak or Off-Peak Inadvertent Interchange calculation will have evidence that it recalculated and corrected the Inadvertent Interchange values, within 90 days from the time the error is discovered, as required in Requirement R3.

Evidence may include, but is not limited to:

- Screen shots from the Interchange Software;
- Screen shots from the Balancing Authority's internal software functions such as internal databases, spreadsheets, and displays;
- Dated archive files; and
- Historic data.

R4. Each Balancing Authority shall keep ATEC in service, with an allowable exception period of less than or equal to an accumulated 24 hours per calendar quarter for

ATEC to be out of service. This period is separate from any period during which the Interchange Software was unavailable. *[Violation Risk Factor: Medium] [Time Horizon: Same-day Operations]*

M4. Each Balancing Authority will have evidence that it kept ATEC in service as required in Requirement R4, subject to the allowable exceptions provided.

Evidence may include, but is not limited to:

- Screen shots from the Interchange Software;
- Screen shots from the Balancing Authority's internal software functions such as internal databases, spreadsheets, and displays;
- Dated archive files; and
- Historical data.

R5. Each Balancing Authority shall be able to change its Automatic Generation Control (AGC) operating mode to correspond to current operating conditions. *[Violation Risk Factor: Medium] [Time Horizon: Real-Time Operations]*

M5. Each Balancing Authority will have evidence that its AGC is able to change operating modes to correspond to current operating conditions, as required in R5.

Evidence may include, but is not limited to:

- Screen shots from Energy Management System; and
- Demonstration using an off-line system.

R6. Each Balancing Authority shall upload hourly Actual Net Interchange (NI_A) to the Interchange Software no later than 50 minutes after each hour. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M6. Each Balancing Authority will have evidence that it uploaded hourly Actual Net Interchange (NI_A) to the Interchange Software no later than 50 minutes after each hour, as required in Requirement R6.

Evidence may include, but is not limited to:

- Screen shots from the Interchange Software;
- Screen shots from the Balancing Authority's internal software functions such as internal databases, spreadsheets, and displays;
- Dated archive files; and
- Historical data.

R7. Each Balancing Authority making a month-end adjustment shall input that value as part of its Actual Net Interchange (NI_A). *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M7. Each Balancing Authority making a month-end adjustment will have evidence that it input that value as part of its Actual Net Interchange (NI_A), as required in Requirement R7.

R8. Each Balancing Authority making a month-end adjustment shall ensure that value is added to its accumulated Primary Inadvertent Interchange. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M8. Each Balancing Authority making a month-end adjustment will have evidence that the value was added to its accumulated Primary Inadvertent Interchange, as required in Requirement R8.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority:

As defined in the NERC Rules of Procedure, "Compliance Enforcement Authority" means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.

1.2. Evidence Retention:

The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- Each Balancing Authority in the WI shall keep the following records for the preceding calendar year (January – December) plus the current calendar year:
  - Its values for PIIhourly, PIIaccum (On-Peak and Off-Peak), ΔTE, and any month-end adjustments.
  - Documentation illustrating any period(s) during which the Balancing Authority operated without ATEC, including the reason ATEC was not in operation.

1.3 Compliance Monitoring and Enforcement Program:

As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

~~**1.4 Compliance Waiver:** Compliance with this Standard is waived for all periods during which the Interchange Software is deemed unavailable.~~

~~Interchange Software is deemed unavailable when it fails to function as designed by the software's vendor, or when the applicable entity(ies) is unable to access the Interchange Software due to hardware, software, or communications difficulties, such as but not limited to, communications failure, lack of internet connectivity, or catastrophic hardware/software system failure.~~

~~Failure of the applicable entity(ies) to procure access to the Interchange Software, such as but not limited to failure to contract for Interchange Software services, does not constitute unavailability.~~

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	NA	NA	NA	The Balancing Authority failed to use the Interchange Software as the sole source to calculate ATEC.
R2.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 150%, but was less than or equal to 160% of the previous calendar year's peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 160%, but was less than or equal to 170% of the previous calendar year's peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 170%, but was less than or equal to 180% of the previous calendar year's peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 180% of the previous calendar year's peak demand or peak generation for generation-only Balancing Authorities.
R3.	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 90 days of the discovery of the error; but made the required recalculations and adjustments within 120 days.	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 120 days of the discovery of the error; but made the required recalculations and adjustments within 150 days.	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 150 days of the discovery of the error; but made the required recalculations and adjustments within 180 days.	The Balancing Authority did not recalculate PIIhourly and adjust PIIaccum within 180 days of the discovery of the error.
R4.	The Balancing Authority operated during a calendar	The Balancing Authority operated during a calendar	The Balancing Authority operated during a calendar	The Balancing Authority operated during a calendar

	quarter without ATEC in service for more than an accumulated 24 hours, but less than or equal to 72 hours.	quarter without ATEC in service for more than an accumulated 72 hours, but less than or equal to 120 hours.	quarter without ATEC in service for more than an accumulated 120 hours, but less than or equal to 168 hours.	quarter without ATEC in service for more than an accumulated 168 hours.
R5.	N/A	N/A	N/A	The Balancing Authority is not able to change its AGC operating mode to correspond to current operating conditions.
R6.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to two hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to four hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to six hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in more than six hours.
R7.	NA	NA	NA	The Balancing Authority making a month-end adjustment failed to input that value as part of its Net Actual Interchange.
R8.	NA	NA	NA	The Balancing Authority making a month-end adjustment failed to add that value to its accumulated Primary Inadvertent Interchange.

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
1	February 4, 2003	Effective Date.	New
1	October 17, 2006	Created Standard from Procedure.	Errata
1	February 6, 2007	Changed the Standard Version from 0 to 1 in the Version History Table.	Errata
1	February 6, 2007	The upper limit bounds to the amount of Automatic Time Error Correction term was inadvertently omitted during the Standard Translation. The bound was added to the requirement R1.4.	Errata
1	February 6, 2007	The statement “The Time Monitor may declare offsets in 0.001-second increments” was moved from TEoffset to TDadj and offsets was corrected to adjustments.	Errata
1	February 6, 2007	The reference to seconds was deleted from the TE offset term.	Errata
1	June 19, 2007	The standard number BAL-STD-004-1 was changed to BAL-004-WECC-01 to be consistent with the NERC Regional Reliability Standard Numbering Convention.	Errata
2	December 19, 2012	Adopted by NERC Board of Trustees.	
2	October 16, 2013	A FERC Letter Order was issued on October 16, 2013, approving BAL-004-WECC-02. This standard will become enforceable on April 1, 2014.	

Version	Date	Action	Change Tracking
3	December 6, 2017	Approved by the WECC Board of Directors.	Five-year review. The project: 1) relocates the Background section to the preamble of the Guidance section, 2) adds On-Peak and Off-Peak parameters in Requirement R1/M1, 3) addresses WECC Interchange Tool software successors throughout, 4) conforms the document to current drafting conventions (R1/M1, R4/M4), and 5) addresses non-substantive syntax and template concerns.
3	February 8, 2018	Adopted by the NERC Board of Trustees.	
3	May 30, 2018	FERC Order issued approving BAL-004-WECC-3. Docket No. RD18-2-000. Effective Date October 1, 2018.	
4	March 13, 2024	WECC Board of Directors Approved	This project: 1) expands the existing Background section, 2) creates a Standard-specific definition (Interchange Software); 3) creates a requirement to use the Interchange Software; 4) addresses treatment of Balancing Authorities that do not have a full year of operating data; 5) consolidates and clarifies requirements; and 6) updates the document to NERC's newest templates.

Standard Attachments

Not used.

G. Rationale

Nomenclature Update

To conform to NERC's definitional approach, the legacy term Net Actual Interchange (NAI) was replaced with Actual Net Interchange (NI_A). Net Scheduled Interchange (NSI) was replaced with Scheduled Net Interchange (NI_S). The legacy terms and the updated terms are synonymous.

Requirement R1:

The goal of Requirement R1 is to ensure a consistent ATEC calculation within the WI.

Because ATEC is an automatic process, allowing inconsistent calculation of ATEC will cause imbalance in accumulations.

Requirement R2:

The goal of Requirement R2 is to limit the amount of PII_{accum} that a Balancing Authority can have at the end of each month.

To reach the goal, each Balancing Authority should ensure that the absolute value of its PII_{accum} for both the on-peak period and the off-peak period each individually does not exceed 150% of the previous year's Peak Demand for load-serving Balancing Authorities, and 150% of the previous year's peak generation for generation-only Balancing Authorities. The Balancing Authority is required to keep each PII_{accum} period within the limit. For example, the Balancing Authorities actions may include:

- Identifying and correcting the source of any metering or accounting error(s) and recalculating the hourly Primary Inadvertent Interchange **(**PII_{hourly}) and the PII_{accum} from the time of the error;
- Validating the implementation of ATEC; or
- Setting L_{max} equal to L_{10}.until the PII_{accum} is below the limit in Requirement R1.

This approach is required because PII_{accum} may grow from month-end adjustments and metering errors, even with the inclusion of I_{ATEC} in the ACE equation.

Requirement R3:

The goal of Requirement R3 is to promote: 1) the timely correction of errors in the calculation of PII and PII_{accum}, and 2) the accurate, fair, and timely payback of accumulated PII balances.

When a Balancing Authority finds an error in the calculation of its PII, the Balancing Authority needs time to correct the error and recalculate PII and PII_{accum}.

Hourly adjustments to hourly Inadvertent Interchange (II) require a recalculation of the corresponding hourly PII value, the corresponding PII_{accum}, and all subsequent PII_{accum} for every hour up to the current hour.

The drafting team selected 90 days as a reasonable amount of time to correct an error and recalculate PII and PII_{accum}, since recalculation of PII and PII_{accum} is not a real-time operations reliability issue. As PII hourly is corrected, then PIIaccum should be recalculated.

Requirement R4:

The goal of Requirement R4 is to promote fair and timely payback of PII_{accum} balances by ensuring that ATEC remains in service whenever possible.

When a Balancing Authority is not participating in ATEC, payback of PII_{accum} is delayed.

The limit of 24 hours per quarter discourages a Balancing Authority from withdrawing ATEC participation, for example, for economic gain during selected hours. If the limits were increased to 60 hours, a Balancing Authority could technically withdraw ATEC participation for one hour from Monday to Friday.

Requirement R5:

A review of NERC Standards conducted by the Version 4 drafting team concluded that this Requirement is best located in a Standard focused on Automatic Generator Control (AGC). However, until an AGC-specific Standard is drafted, the Requirement should not be retired.

The goal of Requirement R5 is to ensure that AGC has the ability to respond to varying operating conditions.

Requirement R6:

Not used**.**

Requirement R7:

Not used.

Requirement R8:

Not used.

A. Introduction

1. **Title:** Automatic Time Error Correction

2. **Number:** BAL-004-WECC-~~3~~4

3. **Purpose:** To maintain Western Interconnection (WI) frequency, and ~~to~~ ensure that ~~Time Error Corrections and~~time error accumulation via Primary Inadvertent Interchange (PII) payback ~~are effectively~~is conducted in a manner that does not ~~adversely affect the~~ result in a negative impact on reliability ~~of the Interconnection.~~.

~~5.~~4. **Applicability:**

~~5.1.~~4.1. **Functional Entities:**

4.1.1. Balancing Authorities ~~that operate~~operating synchronously ~~in~~within the ~~Western Interconnection.~~WI

4.2. Compliance Waiver:

4.2.1. See Section C., Compliance, 1.4 Compliance Waiver, for applicability during periods of Interchange Software unavailability.

5. **Effective Date:** ~~On the~~ The first day of the second quarter~~, after applicable~~ following regulatory approval ~~has been received (or the~~.

6. **Background:**

Pre-2000 (prior to mandatory Standards), the Western Electricity Coordinating Council (WECC) operated using the Minimum Operating Reliability ~~Standard otherwise becomes~~Criteria (MORC). Per MORC Section D. Time Control, Control Areas were required to assist in maintaining frequency at or near 60.0 Hz, as prescribed in the Western System Coordinating Council (WSCC)[1] Procedure for Time Error Control (PTEC). Various versions of the PTEC predate 1980.

In February 2003, the WECC Automatic Time Error Correction (ATEC) Procedure (Procedure) became effective ~~the first day of the fourth quarter following~~ for all Balancing Authorities in the WI. The original intent of the Procedure was to minimize the number of manual Time Error Corrections in the WI.[2]

In June 2007, the Procedure was translated into BAL-STD-004-1, Time Error Correction, followed by BAL-004-WECC-1 through 3, Time Error Correction.[3] BAL-004-WECC-1 required Balancing Authorities within the WI to maintain Interconnection frequency within a predefined frequency profile, and to ensure that Time Error Corrections would

[1] WECC began in 1967 as the Western Systems Coordinating Council (WSCC), a group of 40 power systems with a common goal of providing reliable power to the public whom they served. WECC was founded March 22, 1994.

[2] The Procedure provided for cost assignment and equitable payback of Inadvertent Interchange, not otherwise addressed in BAL-004-4, Time Error Correction.

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not result in a negative impact on Interconnection reliability.

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7.1 Interchange Software:

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7.2. ATEC:

This Standard uses the term "ATEC" as defined in the WECC Regional Definitions section of the NERC Glossary of Terms Used in Reliability Standards.

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[6] Previously called Net Actual Interchange

B. Requirements and Measures

R1. Each Balancing Authority shall use the Interchange Software as the sole source of data to calculate its ATEC. [Violation Risk Factor: Severe] [Time Horizon: Operations Assessment]

M1. Each Balancing Authority will have evidence that it used the Interchange Software as the sole source of data to calculate its ATEC, as required in Requirement R1.

Evidence may include, but is not limited to production of a corporate attestation or operating procedure indicating use of the Interchange Software as the sole source for calculating ATEC.

R2. Each Balancing Authority shall operate its system such that, ~~following the conclusion of each month,~~ the month-end absolute value of its On-Peak and Off-Peak, ~~Accumulated~~accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the ~~WECC~~ Interchange ~~Tool (WIT) or its successor electronic confirmation tool~~Software, are each individually less than or equal to~~:~~ 150% of the previous calendar year's integrated hourly peak demand where peak demand is total load plus total exports. *[Violation Risk Factor Medium:] [Time Horizon: Operations Assessment]*

2.1. For ~~load-serving~~new Balancing Authorities, ~~150% of the previous calendar year's integrated hourly Peak Demand,~~the peak demand will be the maximum hourly integrated peak demand as it increases during the first year of operation.

~~**1.1** For generation-only Balancing Authorities, 150% of the previous calendar year's integrated hourly peak generation.~~

~~**M1**~~**M2.** Each Balancing Authority will have evidence that it operated its system such that~~,~~ ~~following the conclusion of each month,~~ the month-end absolute value of its On-Peak and Off-Peak, ~~Accumulated~~accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the ~~WECC~~ Interchange ~~Tool (WIT)~~Software, are each individually less than or ~~its successor electronic confirmation tool, meets all criteria stated~~equal to 150% of the previous calendar year's integrated hourly peak demand where peak demand is total load plus total exports, average load in those hours, as calculated by the Interchange Software, per Requirement ~~R1~~R2, or per the exception allowed in R2.1.

~~**R2**~~**R3.** Each Balancing Authority shall, upon discovery of an error in ~~the~~its On-Peak or Off-Peak Inadvertent Interchange calculation ~~of PII_{hourly}~~, recalculate and correct the Inadvertent Interchange values within 90 days~~, the value of PII_{hourly} and adjust the PII_{accum}~~ from the time ~~of~~ the error~~.~~ is discovered. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

~~**M2**. Forms of acceptable~~**M3.** Each Balancing Authority discovering an error in its On-Peak or Off-Peak Inadvertent Interchange calculation will have evidence ~~of compliance with~~that it recalculated and corrected the Inadvertent Interchange values, within 90 days from the time the error is discovered, as required in Requirement ~~R2~~R3.

Evidence may include, but ~~are~~is not limited to ~~any one of the following~~:

- ~~Data, screen~~Screen shots from the ~~WECC~~ Interchange ~~Tool (WIT) or its successor electronic confirmation tool,~~Software;
- ~~Data, screen~~Screen shots from the Balancing Authority's internal ~~Balancing Authority tool, or~~
- ~~Production of data from any other~~software functions such as internal databases, spreadsheets, and displays~~.~~;

- ~~**R3**~~Dated archive files; and
- Historic data.

R4. Each Balancing Authority shall keep ~~its Automatic Time Error Correction (ATEC)~~ATEC in service, with an allowable exception period of less than or equal to an accumulated 24 hours per calendar quarter for ATEC to be out of service. This period is separate from any period during which the Interchange Software was unavailable. *[Violation Risk Factor: Medium] [Time Horizon: Same-day Operations]*

~~**M3. Forms of acceptable**~~**M4.** Each Balancing Authority will have evidence ~~of compliance with~~that it kept ATEC in service as required in Requirement ~~R3~~R4, subject to the allowable exceptions provided.

Evidence may include, but ~~are~~is not limited to:

- ~~Dated archived files,~~
- ~~Historical data,~~
- ~~Other data that demonstrates the ATEC was out of service for less than 24 hours per calendar quarter.~~

~~**R4.** Each Balancing Authority shall compute each of the following using the WECC Interchange Tool (WIT) or its successor electronic confirmation tool, no later than 50 minutes after each hour,~~

~~**3.0.** PII_{hourly};~~

~~**3.0.** PII_{accum};~~

~~***3.0.*** Automatic Time Error Correction term (I_{ATEC}).~~

~~*[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*~~

~~**M4.** Forms of acceptable evidence of compliance with Requirement R4 include but are not limited to any one of the following:~~

- ~~Data, screen shots from the WECC Interchange Tool (WIT) or its successor electronic confirmation tool, that demonstrate compliance;~~
- ~~Data, screen~~Screen shots from the Interchange Software;
- Screen shots from ~~internal~~the Balancing ~~Authority tool that demonstrate~~

~~compliance; or,~~

- ~~Data from any other~~Authority's internal software functions such as internal databases, spreadsheets, and displays ~~that demonstrate compliance.~~;

- Dated archive files; and

- Historical data.

R5. Each Balancing Authority shall be able to change its Automatic Generation Control (AGC) operating mode ~~between Flat Frequency (for blackout restoration); Flat Tie-Line (for loss of frequency telemetry); Tie-Line Bias; and Tie-Line Bias plus Time Error Control (used in ATEC mode),~~ to correspond to current operating conditions. *[Violation Risk Factor: Medium] [Time Horizon: Real-Time Operations]*

M5. ~~Forms of acceptable~~Each Balancing Authority will have evidence ~~of compliance with Requirement~~that its AGC is able to change operating modes to correspond to current operating conditions, as required in R5.

Evidence may include, but ~~are~~is not limited to ~~any one of the following:~~:

- Screen shots from Energy Management System~~,~~; and

- Demonstration using an off-line system.

R6. Each Balancing Authority shall ~~recalculate the PII~~hourly ~~and PII~~accum ~~for the On-Peak and Off-Peak periods whenever adjustments are made to~~ upload hourly ~~Inadvertent~~Actual Net Interchange ~~or DTE~~(NI_A) to the Interchange Software no later than 50 minutes after each hour. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M6. ~~Forms of acceptable~~Each Balancing Authority will have evidence ~~of compliance with~~that it uploaded hourly Actual Net Interchange (NI_A) to the Interchange Software no later than 50 minutes after each hour, as required in Requirement R6.

Evidence may include, but ~~are~~is not limited to ~~any one of the following~~:

- ~~Data, screen~~Screen shots from the Interchange Software;

  - ~~Screen~~ shots from the ~~WECC Interchange Tool (WIT) or its successor electronic confirmation tool, that demonstrate compliance;~~

  - ~~Data, screen shots from an~~Balancing Authority's internal ~~Balancing Authority tool that demonstrate compliance with; or,~~

- ~~Data from any other~~ software functions such as internal databases, spreadsheets, and displays ~~that demonstrate compliance.~~;

- Dated archive files; and

- Historical data.

R7. Each Balancing Authority ~~shall make the same adjustment to the PII~~accum as it did for ~~any~~making a month-end ~~meter reading adjustments to Inadvertent~~adjustment shall input that value as part of its Actual Net Interchange~~.~~ (NI_A). *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M7. ~~Forms of acceptable~~ Each Balancing Authority making a month-end adjustment will have evidence ~~of compliance with~~that it input that value as part of its Actual Net Interchange (NI_A), as required in Requirement R7 ~~include but are not limited to any one of the following:~~.

- ~~Data, screen shots from the WECC Interchange Tool (WIT) or its successor electronic confirmation tool, that demonstrate compliance;~~
- ~~Data, screen shots from an internal Balancing Authority tool that demonstrate compliance; or,~~
- ~~Production of data from any other databases, spreadsheets, displays that demonstrate compliance.~~

R8. Each Balancing Authority making a month-end adjustment shall ~~payback~~ensure that value is added to its accumulated Primary Inadvertent Interchange ~~using ATEC rather than bilateral and unilateral payback~~. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M8.

~~**M8.** Forms of acceptable~~Each Balancing Authority making a month-end adjustment will have evidence ~~of compliance with Requirement R8 include but are not limited~~that the value was added to ~~historical On-Peak and Off-Peak~~its accumulated Primary Inadvertent Interchange ~~data, data from the WECC Interchange Tool, and ACE data.~~, as required in Requirement R8.

C. Compliance

~~2.~~1. Compliance Monitoring Process

~~2.2.~~1.1. Compliance Enforcement Authority:

~~The Regional Entity shall serve as~~As defined in the NERC Rules of Procedure, "Compliance Enforcement Authority~~.~~

~~For entities that do not work for~~ " means NERC or the Regional Entity~~,~~ in their respective roles of monitoring and enforcing compliance with the ~~Regional Entity shall serve as the Compliance Enforcement Authority.~~

~~For~~NERC Reliability ~~Coordinators and other functional entities that work for their Regional Entity, the ERO or a Regional Entity approved by the ERO and FERC or other applicable governmental authorities shall serve as the Compliance Enforcement Authority~~Standards.

~~For responsible entities that are also Regional Entities, the ERO or a Regional Entity approved by the ERO and FERC or other applicable governmental authorities shall serve as the Compliance Enforcement Authority.~~

~~**0.0 Compliance Monitoring and Assessment Processes:**~~

~~Compliance Audits~~

~~Self-Certifications~~

~~Spot Checking~~

~~Compliance Investigations~~

~~Self-Reporting~~

~~Complaints~~

~~2.9.~~1.2. Evidence Retention:

The following evidence retention ~~periods~~period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full ~~-~~-time period since the last audit.

~~Each Balancing~~The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority ~~in the Western Interconnection shall~~ to retain specific evidence for a longer period of time as part of an investigation.

- Each Balancing Authority in the WI shall keep the following records for the preceding calendar year (January – December) plus the current calendar year:
  - Its values ~~of~~for PIIhourly, PIIaccum (On-Peak and Off-Peak), ~~D~~ΔTE, and any month-end adjustments ~~for the preceding calendar year (January –~~

~~**December), as well as the current calendar year**~~.

- ~~Each Balancing Authority in the Western Interconnection shall retain the amount of time~~ Documentation illustrating any period(s) during which the Balancing Authority operated without ATEC ~~for the preceding calendar year (January – December), as well as the current calendar year.~~, including the reason ATEC was not in operation.

~~1.1 Additional Compliance Information~~

~~None~~

~~**Table of Compliance Elements**~~

1.3 Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

1.4 Compliance Waiver: Compliance with this Standard is waived for all periods during which the Interchange Software is deemed unavailable.

Interchange Software is deemed unavailable when it fails to function as designed by the software's vendor, or when the applicable entity(ies) is unable to access the Interchange Software due to hardware, software, or communications difficulties, such as but not limited to, communications failure, lack of internet connectivity, or catastrophic hardware/software system failure.

Failure of the applicable entity(ies) to procure access to the Interchange Software, such as but not limited to failure to contract for Interchange Software services, does not constitute unavailability.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	NA	NA	NA	The Balancing Authority failed to use the Interchange Software as the sole source to calculate ATEC.
~~R1~~**R2.**	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 150%, but was less than or equal to 160% of the previous calendar year's ~~Peak Demand~~peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 160%, but was less than or equal to 170% of the previous calendar year's ~~Peak Demand~~peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 170%, but was less than or equal to 180% of the previous calendar year's ~~Peak Demand~~peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 180% of the previous calendar year's ~~Peak Demand~~peak demand or peak generation for generation-only Balancing Authorities.
~~R2~~**R3.**	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 90 days of the discovery of the error; but made the required recalculations and adjustments within 120 days.	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 120 days of the discovery of the error; but made the required recalculations and adjustments within 150 days.	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 150 days of the discovery of the error; but made the required recalculations and adjustments within 180 days.	The Balancing Authority did not recalculate PIIhourly and adjust PIIaccum within 180 days of the discovery of the error.
R4.	The Balancing Authority operated during a calendar	The Balancing Authority operated during a calendar	The Balancing Authority operated during a calendar	The Balancing Authority operated during a calendar

	quarter without ATEC in service for more than an accumulated 24 hours, but less than or equal to 72 hours.	quarter without ATEC in service for more than an accumulated 72 hours, but less than or equal to 120 hours.	quarter without ATEC in service for more than an accumulated 120 hours, but less than or equal to 168 hours.	quarter without ATEC in service for more than an accumulated 168 hours.
R5.	N/A	N/A	N/A	The Balancing Authority is not able to change its AGC operating mode to correspond to current operating conditions.
R6.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to two hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to four hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to six hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in more than six hours.
R7.	NA	NA	NA	The Balancing Authority making a month-end adjustment failed to input that value as part of its Net Actual Interchange.
R8.	NA	NA	NA	The Balancing Authority making a month-end adjustment failed to add that value to its accumulated Primary Inadvertent Interchange.

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
1	February 4, 2003	Effective Date.	New
1	October 17, 2006	Created Standard from Procedure.	Errata
1	February 6, 2007	Changed the Standard Version from 0 to 1 in the Version History Table.	Errata
1	February 6, 2007	The upper limit bounds to the amount of Automatic Time Error Correction term was inadvertently omitted during the Standard Translation. The bound was added to the requirement R1.4.	Errata
1	February 6, 2007	The statement "The Time Monitor may declare offsets in 0.001-second increments" was moved from TEoffset to TDadj and offsets was corrected to adjustments.	Errata
1	February 6, 2007	The reference to seconds was deleted from the TE offset term.	Errata
1	June 19, 2007	The standard number BAL-STD-004-1 was changed to BAL-004-WECC-01 to be consistent with the NERC Regional Reliability Standard Numbering Convention.	Errata
2	December 19, 2012	Adopted by NERC Board of Trustees.	
2	October 16, 2013	A FERC Letter Order was issued on October 16, 2013, approving BAL-004-WECC-02. This standard will become enforceable on April 1, 2014.	

Version	Date	Action	Change Tracking
3	December 6, 2017	Approved by the WECC Board of Directors.	Five-year review. The project: 1) relocates the Background section to the preamble of the Guidance section, 2) adds On-Peak and Off-Peak parameters in Requirement R1/M1, 3) addresses WECC Interchange Tool software successors throughout, 4) conforms the document to current drafting conventions (R1/M1, R4/M4), and 5) addresses non-substantive syntax and template concerns.
3	February 8, 2018	Adopted by the NERC Board of Trustees.	

~~R #~~	~~Time Horizon~~	~~VRF~~	~~Violation Severity Levels~~			
			~~Lower VSL~~	~~Moderate VSL~~	~~High VSL~~	~~Severe VSL~~

R3	Real-Time Operations	Medium	The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 24 hours, but less than or equal to 72 hours.	The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 72 hours, but less than or equal to 120 hours.	The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 120 hours, but less than or equal to 168 hours	The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 168 hours.
R4	Operations Assessment	Medium	The Balancing Authority did not compute PII_{hourly}, PII_{accum}, and I_{ATEC} within 50 minutes, but made the required calculations in less than or equal to two hours.	The Balancing Authority did not compute PII_{hourly}, PII_{accum}, and I_{ATEC} within two hours, but made the required calculations in less than or equal to four hours.	The Balancing Authority did not compute PII_{hourly}, PII_{accum}, and I_{ATEC} within four hours, but made the required calculations in less than or equal to six hours.	The Balancing Authority did not compute PII_{hourly}, PII_{accum}, and I_{ATEC} within six hours.
R5	Real-Time Operations	Medium	N/A	N/A	N/A	The Balancing Authority is not able to change its AGC operating mode between Flat Frequency (for blackout restoration; Flat Tie Line (for loss of frequency

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
						telemetry); Tie Line Bias; or Tie Line Bias plus Time Error control (used in ATEC mode).
R6	Operations Assessment	Medium	N/A	N/A	N/A	When making adjustments to hourly Inadvertent Interchange or DTE, the Balancing Authority did not recalculate the PII_{hourly} and the PII_{accum} for the On-Peak and Off-Peak periods.
R7	Operations Assessment	Medium	N/A	N/A	N/A	When making any month-end meter reading adjustments to Inadvertent Interchange, the Balancing Authority did not make the same adjustment to the PII_{accum}.

~~R #~~	~~Time Horizon~~	~~VRF~~	~~Violation Severity Levels~~			
			~~Lower VSL~~	~~Moderate VSL~~	~~High VSL~~	~~Severe VSL~~
~~R8~~	~~Operations Assessment~~	~~Medium~~	~~N/A~~	~~N/A~~	~~N/A~~	~~The Balancing Authority paid back Inadvertent Interchange using bilateral and unilateral payback rather than using ATEC.~~

Guidelines and Technical Basis

Background

In February 2003, the WECC Automatic Time Error Correction (ATEC) Procedure (Procedure) became effective for all Balancing Authorities in the Western Interconnection. The original intent of the Procedure was to minimize the number of Manual Time Error Corrections in the Western Interconnection. ATEC provides the added benefit of a superior approach over NERC Reliability Standard BAL-004-0 – Time Error Correction for assigning costs and providing for the equitable payback of Inadvertent Interchange. In October 2006, the Procedure became a WECC Criterion. In May 2009, FERC issued Order No.723 that approved Regional Reliability Standard BAL-004-WECC-1 - Automatic Time Error Correction, as submitted by NERC. In addition, the Commission directed WECC to develop several clarifying modifications to BAL-004-WECC-1 using the FERC-approved Process for Developing and Approving WECC Standards. The Effective Date of the BAL-004-WECC-1 standard was July 1, 2009. BAL-004-WECC-1 required Balancing Authorities within the Western Interconnection to maintain Interconnection frequency within a predefined frequency profile and to ensure that Time Error Corrections were effectively conducted in a manner that did not adversely affect the reliability of the Interconnection. In September 2009, WECC received WECC Standards/Regional Criterion Request Form (Request) WECC-0068, which was a request for modification of BAL-004-WECC-1. In July 2010, the chair of the WECC Operating Committee assigned the Request to the Performance Work Group (PWG) for development.

Requirement R1:

Premise: Each3	May 30, 2018	FERC Order issued approving BAL-004-WECC-3. Docket No. RD18-2-000. Effective Date October 1, 2018.	
4	March 13, 2024	WECC Board of Directors Approved	This project: 1) expands the existing Background section, 2) creates a Standard-specific definition (Interchange Software); 3) creates a requirement to use the Interchange Software; 4) addresses treatment of Balancing Authorities that do not have a full year of operating data; 5) consolidates and clarifies requirements; and 6) updates the document to NERC's newest templates.

Standard Attachments

Not used.

G. Rationale

Nomenclature Update

To conform to NERC's definitional approach, the legacy term Net Actual Interchange (NAI) was replaced with Actual Net Interchange (NI_A). Net Scheduled Interchange (NSI) was replaced with Scheduled Net Interchange (NI_S). The legacy terms and the updated terms are synonymous.

Requirement R1:

The goal of Requirement R1 is to ensure a consistent ATEC calculation within the WI.

Because ATEC is an automatic process, allowing inconsistent calculation of ATEC will cause imbalance in accumulations.

Requirement R2:

The goal of Requirement R2 is to limit the amount of PII_{accum} that a Balancing Authority can have at the end of each month.

To reach the goal, each Balancing Authority should ensure that the absolute value of its PII_{accum} for both the ~~On-Peak~~on-peak period and the ~~Off-Peak~~off-peak period each individually does not exceed 150% of the previous year's Peak Demand for load-serving Balancing Authorities, and 150% of the previous year's peak generation for generation-only Balancing Authorities. The Balancing Authority is required to keep each PII_{accum} period within the limit. For example, the Balancing Authorities actions may include:

- Identifying and correcting the source of any metering or accounting error(s) and recalculating the hourly Primary Inadvertent Interchange (**PII_{hourly}**) and the PII_{accum} from the time of the error;
- Validating the implementation of ATEC; or
- Setting L_{max} equal to L_{10}.until the PII_{accum} is below the limit in Requirement R1.

~~**Justification:**~~This approach is required because PII_{accum} may grow from month-end adjustments and metering errors, even with the inclusion of I_{ATEC} in the ACE equation.

~~**Goal: To limit the amount of PII_{accum} that a Balancing Authority can have at the end of each month.**~~
~~**Requirement R2:**~~
~~**Premise:**~~ **Requirement R3:**

The goal of Requirement R3 is to promote: 1) the timely correction of errors in the calculation of PII and PII_{accum}, and 2) the accurate, fair, and timely payback of accumulated PII balances.

When a Balancing Authority finds an error in the calculation of its PII, the Balancing Authority needs time to correct the error and recalculate PII and PII_{accum}.

~~**Justification:**~~ Hourly adjustments to hourly Inadvertent Interchange (II) require a recalculation of the corresponding hourly PII value, the corresponding PII_{accum}, and all subsequent PII_{accum} for every hour up to the current hour.

The drafting team selected 90 days as a reasonable amount of time to correct an error and recalculate PII and PII_{accum}, since recalculation of PII and PII_{accum} is not a real-time operations reliability issue. As PII hourly is corrected, then PII_{accum} should be recalculated.

~~**Goal: To**~~**Requirement R4:**

The goal of Requirement R4 is to promote ~~the~~fair and timely ~~correction of errors in the calculation~~payback of ~~PII and~~ PII_{accum}~~.~~ balances by ensuring that ATEC remains in service whenever possible.

~~**Requirement R3:**~~

~~**Premise:**~~ When a Balancing Authority is not participating in ATEC, payback of PII_{accum} is delayed.

~~**Justification:**~~ The limit of 24 hours per quarter discourages a Balancing Authority from withdrawing ATEC participation, for example, for economic gain during selected hours. If the limits were increased to 60 hours, a Balancing Authority could technically withdraw ATEC participation for one hour from Monday to Friday.

~~**Goal**: To promote fair and timely payback of PII_{accum} balances.~~

Requirement ~~R4~~R5:

~~**Premise**: PII_{hourly}, PII_{accum}, and I_{ATEC} should be determined before the next scheduling hour begins.~~

~~**Justification: To promote timely calculations 50 minutes was selected because it is before the next hour ramp begins and permits time**~~A review of NERC Standards conducted by the Version 4 drafting team concluded that this Requirement is best located in a Standard focused on Automatic Generator Control (AGC). However, until an AGC-specific Standard is drafted, the Requirement should not be retired.

The goal of Requirement R5 is to ~~collect~~ensure that AGC has the ~~data and resolve interchange metering values.~~

~~**Goal**: To promote the timely calculation of PII_{hourly}, PII_{accum}, and I_{ATEC}.~~

~~**Requirement R5:**~~
~~**Premise: The ACE equation, and hence the AGC mode, will contain any number of parameters based on system**~~ability to respond to varying operating conditions. ~~**Various AGC modes are identified corresponding to those operating conditions, as well as the specific sets of parameters included in the ACE equation.**~~

Justification: Changing to the proper operating mode, corresponding to current operating conditions, affords proper movement of generating units in response to those conditions. The addition of the ATEC term results in an additional AGC mode and a different set of parameters. The inability to correctly calculate the ATEC term would dictate that AGC not be operated in the ATEC mode.

Goal: To set the AGC mode and calculate ACE in a manner that corresponds to the system operating conditions and to accommodate changes in those conditions.

Requirement R6:

Premise: Not used.

Hourly adjustments to hourly Inadvertent Interchange (II) require a recalculation of the corresponding hourly PII value, the corresponding PII_{accum}, and all subsequent PII_{accum} for every hour up to the current hour.

Justification: As PII_{hourly} is corrected, then PII_{accum} should be recalculated.

Goal: To promote accurate, fair and timely payback of accumulated PII balances.

Requirement R7:

Premise: Month-end meter reading adjustments are made, for example, when a Balancing Authority performs monthly comparisons of recorded month-end Net Actual Interchange (NI_A) values derived from hourly Actual Interchange Telemetered Values against month-end Actual Interchange Register Meter readings.

Justification: Month-end adjustments to II_{accum} are applied as 100% PII_{accum}. 100% was chosen for simplicity to bilaterally assign PII_{accum} to both Balancing Authorities, since the effect of this metering error on system frequency is not easily determined over the course of a month.

Goal: To provide a mechanism by which corresponding month-end II adjustments can be **applied** to PII_{accum}, when such adjustments cannot be attributed to any one hour or series of hours.

Not used.

Requirement R8:

Premise: ATEC includes automatic unilateral payback of Primary Inadvertent Interchange and Secondary Inadvertent Interchange.

Justification: Additional unilateral and bilateral exchanges disturb the balance and distribution between Primary Inadvertent Interchange and Secondary Inadvertent Interchange throughout the Interconnection; thereby stranding Secondary Inadvertent Interchange.

~~**Goal**: To not strand Secondary Inadvertent Interchange.~~

Not used.

Version History

Version	Date	Action	Change Tracking
1	February 4, 2003	Effective Date.	New
1	October 17, 2006	Created Standard from Procedure.	Errata
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Version	Date	Action	Change Tracking
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3	February 8, 2018	Adopted by the NERC Board of Trustees.	
3	May 30, 2018	FERC Order issued approving BAL-004-WECC-3. Docket No. RD18-2-000. Effective Date October 1, 2018.	

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Regional Reliability Standards Announcement

Western Electricity Coordinating Council
BAL-004-WECC-4

Comment Period Open through May 28, 2024

Now Available

Western Electricity Coordinating Council (WECC) requested that NERC post **Regional Reliability Standard BAL-004-WECC-4 (Automatic Time Error Correction)** for industry review and comment in accordance with the NERC Rules of Procedure.

Background

Proposed Regional Reliability Standard BAL- 004-WECC-4 – Automatic Time Error Correction modifies the current effective regional standard BAL-004-WECC-3 as follows:

- Expanding the existing Background section
- Creating a Standard-specific definition (Interchange Software)
- Creating a requirement to use the Interchange Software
- Addressing treatment of Balancing Authorities that do not have a full year of operating data
- Consolidating and clarifying requirements
- Updating the documents to NERC's newest templates
- Adding a Standard-specific definition, applicable only to this RRS
- Clarifying that when used, the term "ATEC" is as defined in the WECC Regional Definitions section of the NERC Glossary of Terms Used in Reliability Standards (Glossary)

The WECC Board of Directors approved the proposed regional standard on March 13, 2024.

Commenting

Use the Standards Balloting and Commenting System (SBS) to submit comments. Comments must be submitted by **8 p.m. Eastern, Tuesday, May 28, 2024.** An unofficial Word version of the comment form is posted on the Regional Reliability Standards Under Development page.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*
- *Passwords expire every **6 months** and must be reset.*

- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Regional Reliability Standards Development Process

Section 300 of NERC's Rules of Procedures of the Electric Reliability Organization governs the regional reliability standards development process. Although the technical aspects of this Regional Reliability Standard have been vetted through WECC Regional Standards development process, the final approval process for a Regional Reliability Standard requires NERC publicly to notice and request comment on the criteria outlined in the unofficial comment form.

Documents and information about this project are available on the Western Electricity Coordinating Council (WECC) Standards page.

For more information or assistance, contact Reliability Standards Analyst, Kimberlin Harris (via email) or at 404-446-9794.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
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Atlanta, GA 30326
404-446-2560 | www.nerc.com

A. Introduction

1. **Title:** Automatic Time Error Correction

2. **Number:** BAL-004-WECC-4

3. **Purpose:** To maintain Western Interconnection (WI) frequency, and ensure that time error accumulation via Primary Inadvertent Interchange (PII) payback is conducted in a manner that does not result in a negative impact on reliability.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Balancing Authorities operating synchronously within the WI

5. **Effective Date:** The first day of the second quarter following regulatory approval.

6. **Background:**

   Pre-2000 (prior to mandatory Standards), the Western Electricity Coordinating Council (WECC) operated using the Minimum Operating Reliability Criteria (MORC). Per MORC Section D. Time Control, Control Areas were required to assist in maintaining frequency at or near 60.0 Hz, as prescribed in the Western System Coordinating Council (WSCC)[1] Procedure for Time Error Control (PTEC). Various versions of the PTEC predate 1980.

   In February 2003, the WECC Automatic Time Error Correction (ATEC) Procedure (Procedure) became effective for all Balancing Authorities in the WI. The original intent of the Procedure was to minimize the number of manual Time Error Corrections in the WI.[2]

   In June 2007, the Procedure was translated into BAL-STD-004-1, Time Error Correction, followed by BAL-004-WECC-1 through 3, Time Error Correction.[3] BAL-004-WECC-1 required Balancing Authorities within the WI to maintain Interconnection frequency within a predefined frequency profile, and to ensure that Time Error Corrections would not result in a negative impact on Interconnection reliability.

   In September 2009, in response to Federal Energy Regulatory Commission (FERC) Order 723, WECC received Standard Authorization Request (SAR) WECC-0068 requesting modification of BAL-004-WECC-1. Modifications were effective April 1, 2014, creating BAL-004-WECC-2. BAL-004-WECC-2 introduced two performance metrics: 1) in Requirement R1, a 150% metric, and 2) in Requirement R2, a 90-day metric. Neither of these metrics are supported by technical studies. They were included in BAL-004-WECC-

[1] WECC began in 1967 as the Western Systems Coordinating Council (WSCC), a group of 40 power systems with a common goal of providing reliable power to the public whom they served. WECC was founded March 22, 1994.

[2] The Procedure provided for cost assignment and equitable payback of Inadvertent Interchange, not otherwise addressed in BAL-004-4, Time Error Correction.

[3] See Version History Table.

2 as a compromise during drafting.

In May 2018, FERC approved minor revisions to BAL-004-WECC-2 as part of WECC SAR WECC-0124, effective October 1, 2018, creating BAL-004-WECC-3.[4]

In 2023, this Standard was reviewed as part of the WECC SAR WECC-0147. The drafting team noted: 1) Version 3, Requirement R5 migrated from the pre-2000 MORC without initial or subsequent technical support, and 2) R5 addresses capabilities of Automatic Generator Control (AGC) found in no other Standard, without mandating its use or stating how that capability interfaces with ATEC. R5 is retained herein until it can be properly addressed per a NERC Standard Authorization Request.

7. Standard-Only Definition:

7.1 Interchange Software:

This Standard uses the Standard-Only term "Interchange Software" to mean:

The single electronic confirmation tool identified by the Western Electricity Coordinating Council (WECC), or its successor, to be used by all Balancing Authorities throughout the Western Interconnection (WI), that serves as the primary means for confirmation and creation of the final record of Scheduled Net Interchange (NI_S[5]) and Actual Net Interchange (NI_A[6]), during all periods when the Interchange Software is available.

7.2. ATEC:

This Standard uses the term "ATEC" as defined in the WECC Regional Definitions section of the NERC Glossary of Terms Used in Reliability Standards.

[4] FERC Docket No. RD18-2-000. Effective Date October 1, 2018.
[5] Previously called Net Scheduled Interchange
[6] Previously called Net Actual Interchange

B. Requirements and Measures

R1. Each Balancing Authority shall use the Interchange Software as the sole source of data to calculate its ATEC. [Violation Risk Factor: Severe] [Time Horizon: Operations Assessment]

M1. Each Balancing Authority will have evidence that it used the Interchange Software as the sole source of data to calculate its ATEC, as required in Requirement R1.

Evidence may include, but is not limited to production of a corporate attestation or operating procedure indicating use of the Interchange Software as the sole source for calculating ATEC.

R2. Each Balancing Authority shall operate its system such that, the month-end absolute value of its On-Peak and Off-Peak, accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the Interchange Software, are each individually less than or equal to 150% of the previous calendar year's integrated hourly peak demand where peak demand is total load plus total exports. *[Violation Risk Factor Medium:] [Time Horizon: Operations Assessment]*

2.1. For new Balancing Authorities, the peak demand will be the maximum hourly integrated peak demand as it increases during the first year of operation.

M2. Each Balancing Authority will have evidence that it operated its system such that the month-end absolute value of its On-Peak and Off-Peak, accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the Interchange Software, are each individually less than or equal to 150% of the previous calendar year's integrated hourly peak demand where peak demand is total load plus total exports, average load in those hours, as calculated by the Interchange Software, per Requirement R2, or per the exception allowed in R2.1.

R3. Each Balancing Authority shall, upon discovery of an error in its On-Peak or Off-Peak Inadvertent Interchange calculation, recalculate and correct the Inadvertent Interchange values within 90 days from the time the error is discovered. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M3. Each Balancing Authority discovering an error in its On-Peak or Off-Peak Inadvertent Interchange calculation will have evidence that it recalculated and corrected the Inadvertent Interchange values, within 90 days from the time the error is discovered, as required in Requirement R3.

Evidence may include, but is not limited to:

- Screen shots from the Interchange Software;
- Screen shots from the Balancing Authority's internal software functions such as internal databases, spreadsheets, and displays;
- Dated archive files; and
- Historic data.

R4. Each Balancing Authority shall keep ATEC in service, with an allowable exception period of less than or equal to an accumulated 24 hours per calendar quarter for

ATEC to be out of service. This period is separate from any period during which the Interchange Software was unavailable. *[Violation Risk Factor: Medium] [Time Horizon: Same-day Operations]*

M4. Each Balancing Authority will have evidence that it kept ATEC in service as required in Requirement R4, subject to the allowable exceptions provided.

Evidence may include, but is not limited to:

- Screen shots from the Interchange Software;
- Screen shots from the Balancing Authority's internal software functions such as internal databases, spreadsheets, and displays;
- Dated archive files; and
- Historical data.

R5. Each Balancing Authority shall be able to change its Automatic Generation Control (AGC) operating mode to correspond to current operating conditions. *[Violation Risk Factor: Medium] [Time Horizon: Real-Time Operations]*

M5. Each Balancing Authority will have evidence that its AGC is able to change operating modes to correspond to current operating conditions, as required in R5.

Evidence may include, but is not limited to:

- Screen shots from Energy Management System; and
- Demonstration using an off-line system.

R6. Each Balancing Authority shall upload hourly Actual Net Interchange (NI_A) to the Interchange Software no later than 50 minutes after each hour. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M6. Each Balancing Authority will have evidence that it uploaded hourly Actual Net Interchange (NI_A) to the Interchange Software no later than 50 minutes after each hour, as required in Requirement R6.

Evidence may include, but is not limited to:

- Screen shots from the Interchange Software;
- Screen shots from the Balancing Authority's internal software functions such as internal databases, spreadsheets, and displays;
- Dated archive files; and
- Historical data.

R7. Each Balancing Authority making a month-end adjustment shall input that value as part of its Actual Net Interchange (NI_A). *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M7. Each Balancing Authority making a month-end adjustment will have evidence that it input that value as part of its Actual Net Interchange (NI_A), as required in Requirement R7.

R8. Each Balancing Authority making a month-end adjustment shall ensure that value is added to its accumulated Primary Inadvertent Interchange. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M8. Each Balancing Authority making a month-end adjustment will have evidence that the value was added to its accumulated Primary Inadvertent Interchange, as required in Requirement R8.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority:

As defined in the NERC Rules of Procedure, "Compliance Enforcement Authority" means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.

1.2. Evidence Retention:

The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- Each Balancing Authority in the WI shall keep the following records for the preceding calendar year (January – December) plus the current calendar year:
  - Its values for PIIhourly, PIIaccum (On-Peak and Off-Peak), ΔTE, and any month-end adjustments.
  - Documentation illustrating any period(s) during which the Balancing Authority operated without ATEC, including the reason ATEC was not in operation.

1.3 Compliance Monitoring and Enforcement Program:

As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	NA	NA	NA	The Balancing Authority failed to use the Interchange Software as the sole source to calculate ATEC.
R2.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 150%, but was less than or equal to 160% of the previous calendar year's peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 160%, but was less than or equal to 170% of the previous calendar year's peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 170%, but was less than or equal to 180% of the previous calendar year's peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 180% of the previous calendar year's peak demand or peak generation for generation-only Balancing Authorities.
R3.	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 90 days of the discovery of the error; but made the required recalculations and adjustments within 120 days.	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 120 days of the discovery of the error; but made the required recalculations and adjustments within 150 days.	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 150 days of the discovery of the error; but made the required recalculations and adjustments within 180 days.	The Balancing Authority did not recalculate PIIhourly and adjust PIIaccum within 180 days of the discovery of the error.
R4.	The Balancing Authority operated during a calendar	The Balancing Authority operated during a calendar	The Balancing Authority operated during a calendar	The Balancing Authority operated during a calendar

	quarter without ATEC in service for more than an accumulated 24 hours, but less than or equal to 72 hours.	quarter without ATEC in service for more than an accumulated 72 hours, but less than or equal to 120 hours.	quarter without ATEC in service for more than an accumulated 120 hours, but less than or equal to 168 hours.	quarter without ATEC in service for more than an accumulated 168 hours.
R5.	N/A	N/A	N/A	The Balancing Authority is not able to change its AGC operating mode to correspond to current operating conditions.
R6.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to two hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to four hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to six hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in more than six hours.
R7.	NA	NA	NA	The Balancing Authority making a month-end adjustment failed to input that value as part of its Net Actual Interchange.
R8.	NA	NA	NA	The Balancing Authority making a month-end adjustment failed to add that value to its accumulated Primary Inadvertent Interchange.

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
1	February 4, 2003	Effective Date.	New
1	October 17, 2006	Created Standard from Procedure.	Errata
1	February 6, 2007	Changed the Standard Version from 0 to 1 in the Version History Table.	Errata
1	February 6, 2007	The upper limit bounds to the amount of Automatic Time Error Correction term was inadvertently omitted during the Standard Translation. The bound was added to the requirement R1.4.	Errata
1	February 6, 2007	The statement “The Time Monitor may declare offsets in 0.001-second increments” was moved from TEoffset to TDadj and offsets was corrected to adjustments.	Errata
1	February 6, 2007	The reference to seconds was deleted from the TE offset term.	Errata
1	June 19, 2007	The standard number BAL-STD-004-1 was changed to BAL-004-WECC-01 to be consistent with the NERC Regional Reliability Standard Numbering Convention.	Errata
2	December 19, 2012	Adopted by NERC Board of Trustees.	
2	October 16, 2013	A FERC Letter Order was issued on October 16, 2013, approving BAL-004-WECC-02. This standard will become enforceable on April 1, 2014.	

Version	Date	Action	Change Tracking
3	December 6, 2017	Approved by the WECC Board of Directors.	Five-year review. The project: 1) relocates the Background section to the preamble of the Guidance section, 2) adds On-Peak and Off-Peak parameters in Requirement R1/M1, 3) addresses WECC Interchange Tool software successors throughout, 4) conforms the document to current drafting conventions (R1/M1, R4/M4), and 5) addresses non-substantive syntax and template concerns.
3	February 8, 2018	Adopted by the NERC Board of Trustees.	
3	May 30, 2018	FERC Order issued approving BAL-004-WECC-3. Docket No. RD18-2-000. Effective Date October 1, 2018.	
4	March 13, 2024	WECC Board of Directors Approved	This project: 1) expands the existing Background section, 2) creates a Standard-specific definition (Interchange Software); 3) creates a requirement to use the Interchange Software; 4) addresses treatment of Balancing Authorities that do not have a full year of operating data; 5) consolidates and clarifies requirements; and 6) updates the document to NERC's newest templates.

Standard Attachments

Not used.

G. Rationale

Nomenclature Update

To conform to NERC's definitional approach, the legacy term Net Actual Interchange (NAI) was replaced with Actual Net Interchange (NI_A). Net Scheduled Interchange (NSI) was replaced with Scheduled Net Interchange (NI_S). The legacy terms and the updated terms are synonymous.

Requirement R1:

The goal of Requirement R1 is to ensure a consistent ATEC calculation within the WI.

Because ATEC is an automatic process, allowing inconsistent calculation of ATEC will cause imbalance in accumulations.

Requirement R2:

The goal of Requirement R2 is to limit the amount of PII_{accum} that a Balancing Authority can have at the end of each month.

To reach the goal, each Balancing Authority should ensure that the absolute value of its PII_{accum} for both the on-peak period and the off-peak period each individually does not exceed 150% of the previous year's Peak Demand for load-serving Balancing Authorities, and 150% of the previous year's peak generation for generation-only Balancing Authorities. The Balancing Authority is required to keep each PII_{accum} period within the limit. For example, the Balancing Authorities actions may include:

- Identifying and correcting the source of any metering or accounting error(s) and recalculating the hourly Primary Inadvertent Interchange **(**PII_{hourly}) and the PII_{accum} from the time of the error;
- Validating the implementation of ATEC; or
- Setting L_{max} equal to L_{10}.until the PII_{accum} is below the limit in Requirement R1.

This approach is required because PII_{accum} may grow from month-end adjustments and metering errors, even with the inclusion of I_{ATEC} in the ACE equation.

Requirement R3:

The goal of Requirement R3 is to promote: 1) the timely correction of errors in the calculation of PII and PII_{accum}, and 2) the accurate, fair, and timely payback of accumulated PII balances.

When a Balancing Authority finds an error in the calculation of its PII, the Balancing Authority needs time to correct the error and recalculate PII and PII_{accum}.

Hourly adjustments to hourly Inadvertent Interchange (II) require a recalculation of the corresponding hourly PII value, the corresponding PII_{accum}, and all subsequent PII_{accum} for every hour up to the current hour.

The drafting team selected 90 days as a reasonable amount of time to correct an error and recalculate PII and PII_{accum}, since recalculation of PII and PII_{accum} is not a real-time operations reliability issue. As PII hourly is corrected, then PIIaccum should be recalculated.

Requirement R4:

The goal of Requirement R4 is to promote fair and timely payback of PII_{accum} balances by ensuring that ATEC remains in service whenever possible.

When a Balancing Authority is not participating in ATEC, payback of PII_{accum} is delayed.

The limit of 24 hours per quarter discourages a Balancing Authority from withdrawing ATEC participation, for example, for economic gain during selected hours. If the limits were increased to 60 hours, a Balancing Authority could technically withdraw ATEC participation for one hour from Monday to Friday.

Requirement R5:

A review of NERC Standards conducted by the Version 4 drafting team concluded that this Requirement is best located in a Standard focused on Automatic Generator Control (AGC). However, until an AGC-specific Standard is drafted, the Requirement should not be retired.

The goal of Requirement R5 is to ensure that AGC has the ability to respond to varying operating conditions.

Requirement R6:

Not used**.**

Requirement R7:

Not used.

Requirement R8:

Not used.

A. Introduction

1. **Title:** Automatic Time Error Correction

2. **Number:** BAL-004-WECC-~~3~~4

3. **Purpose:** To maintain Western Interconnection (WI) frequency, and ~~to~~ ensure that ~~Time Error Corrections and~~time error accumulation via Primary Inadvertent Interchange (PII) payback ~~are effectively~~is conducted in a manner that does not ~~adversely affect the~~ result in a negative impact on reliability ~~of the Interconnection.~~.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Balancing Authorities ~~that operate~~operating synchronously ~~in~~within the ~~Western Interconnection.~~WI

5. **Effective Date:** ~~On the~~ The first day of the second quarter~~, after applicable~~ following regulatory approval ~~has been received (or the~~.

6. **Background:**

   Pre-2000 (prior to mandatory Standards), the Western Electricity Coordinating Council (WECC) operated using the Minimum Operating Reliability ~~Standard otherwise becomes~~Criteria (MORC). Per MORC Section D. Time Control, Control Areas were required to assist in maintaining frequency at or near 60.0 Hz, as prescribed in the Western System Coordinating Council (WSCC)[1] Procedure for Time Error Control (PTEC). Various versions of the PTEC predate 1980.

   In February 2003, the WECC Automatic Time Error Correction (ATEC) Procedure (Procedure) became effective ~~the first day of the fourth quarter following~~ for all Balancing Authorities in the WI. The original intent of the Procedure was to minimize the number of manual Time Error Corrections in the WI.[2]

   In June 2007, the Procedure was translated into BAL-STD-004-1, Time Error Correction, followed by BAL-004-WECC-1 through 3, Time Error Correction.[3] BAL-004-WECC-1 required Balancing Authorities within the WI to maintain Interconnection frequency within a predefined frequency profile, and to ensure that Time Error Corrections would not result in a negative impact on Interconnection reliability.

   In September 2009, in response to Federal Energy Regulatory Commission (FERC) Order 723, WECC received Standard Authorization Request (SAR) WECC-0068 requesting

[1] WECC began in 1967 as the Western Systems Coordinating Council (WSCC), a group of 40 power systems with a common goal of providing reliable power to the public whom they served. WECC was founded March 22, 1994.

[2] The Procedure provided for cost assignment and equitable payback of Inadvertent Interchange, not otherwise addressed in BAL-004-4, Time Error Correction.

[3] See Version History Table.

modification of BAL-004-WECC-1. Modifications were effective April 1, 2014, creating BAL-004-WECC-2. BAL-004-WECC-2 introduced two performance metrics: 1) in Requirement R1, a 150% metric, and 2) in Requirement R2, a 90-day metric. Neither of these metrics are supported by technical studies. They were included in BAL-004-WECC-2 as a compromise during drafting.

In May 2018, FERC approved minor revisions to BAL-004-WECC-2 as part of WECC SAR WECC-0124, effective October 1, 2018, creating BAL-004-WECC-3.[4]

In 2023, this Standard was reviewed as part of the WECC SAR WECC-0147. The drafting team noted: 1) Version 3, Requirement R5 migrated from the pre-2000 MORC without initial or subsequent technical support, and 2) R5 addresses capabilities of Automatic Generator Control (AGC) found in no other Standard, without mandating its use or stating how that capability interfaces with ATEC. R5 is retained herein until it can be properly addressed per a NERC ~~Board adoption where regulatory approval is not required).~~Standard Authorization Request.

7. Standard-Only Definition:

7.1 Interchange Software:

This Standard uses the Standard-Only term “Interchange Software” to mean:

The single electronic confirmation tool identified by the Western Electricity Coordinating Council (WECC), or its successor, to be used by all Balancing Authorities throughout the Western Interconnection (WI), that serves as the primary means for confirmation and creation of the final record of Scheduled Net Interchange (NI_S[5]) and Actual Net Interchange (NI_A[6]), during all periods when the Interchange Software is available.

7.2. ATEC:

This Standard uses the term “ATEC” as defined in the WECC Regional Definitions section of the NERC Glossary of Terms Used in Reliability Standards.

[4] FERC Docket No. RD18-2-000. Effective Date October 1, 2018.
[5] Previously called Net Scheduled Interchange
[6] Previously called Net Actual Interchange

B. Requirements and Measures

R1. Each Balancing Authority shall use the Interchange Software as the sole source of data to calculate its ATEC. [Violation Risk Factor: Severe] [Time Horizon: Operations Assessment]

M1. Each Balancing Authority will have evidence that it used the Interchange Software as the sole source of data to calculate its ATEC, as required in Requirement R1.

Evidence may include, but is not limited to production of a corporate attestation or operating procedure indicating use of the Interchange Software as the sole source for calculating ATEC.

R2. Each Balancing Authority shall operate its system such that, ~~following the conclusion of each month,~~ the month-end absolute value of its On-Peak and Off-Peak, ~~Accumulated~~accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the ~~WECC~~ Interchange ~~Tool (WIT) or its successor electronic confirmation tool~~Software, are each individually less than or equal to~~:~~ 150% of the previous calendar year's integrated hourly peak demand where peak demand is total load plus total exports. *[Violation Risk Factor Medium:] [Time Horizon: Operations Assessment]*

2.1. For ~~load-serving~~new Balancing Authorities, ~~150% of the previous calendar year's integrated hourly Peak Demand,~~the peak demand will be the maximum hourly integrated peak demand as it increases during the first year of operation.

~~**1.1** For generation-only Balancing Authorities, 150% of the previous calendar year's integrated hourly peak generation.~~

~~**M1**~~**M2.** Each Balancing Authority will have evidence that it operated its system such that~~,~~ ~~following the conclusion of each month,~~ the month-end absolute value of its On-Peak and Off-Peak, ~~Accumulated~~accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the ~~WECC~~ Interchange ~~Tool (WIT)~~Software, are each individually less than or ~~its successor electronic confirmation tool, meets all criteria stated~~equal to 150% of the previous calendar year's integrated hourly peak demand where peak demand is total load plus total exports, average load in those hours, as calculated by the Interchange Software, per Requirement ~~R1~~R2, or per the exception allowed in R2.1.

~~**R2**~~**R3.** Each Balancing Authority shall, upon discovery of an error in ~~the~~its On-Peak or Off-Peak Inadvertent Interchange calculation ~~of PII_{hourly}~~, recalculate and correct the Inadvertent Interchange values within 90 days~~, the value of PII_{hourly} and adjust the PII_{accum}~~ from the time ~~of~~ the error~~.~~ is discovered. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

~~**M2**. Forms of acceptable~~**M3.** Each Balancing Authority discovering an error in its On-Peak or Off-Peak Inadvertent Interchange calculation will have evidence ~~of compliance with~~that it recalculated and corrected the Inadvertent Interchange values, within 90 days from the time the error is discovered, as required in Requirement ~~R2~~R3.

Evidence may include, but ~~are~~is not limited to ~~any one of the following~~:

- ~~Data, screen~~Screen shots from the ~~WECC~~ Interchange ~~Tool (WIT) or its successor electronic confirmation tool,~~Software;
- ~~Data, screen~~Screen shots from the Balancing Authority's internal ~~Balancing Authority tool, or~~
- ~~Production of data from any other~~software functions such as internal databases, spreadsheets, and displays~~.~~;

- ~~**R3**~~Dated archive files; and
- Historic data.

R4. Each Balancing Authority shall keep ~~its Automatic Time Error Correction (ATEC)~~ATEC in service, with an allowable exception period of less than or equal to an accumulated 24 hours per calendar quarter for ATEC to be out of service. This period is separate from any period during which the Interchange Software was unavailable. *[Violation Risk Factor: Medium] [Time Horizon: Same-day Operations]*

~~**M3. Forms of acceptable**~~**M4.** Each Balancing Authority will have evidence ~~of compliance with~~that it kept ATEC in service as required in Requirement ~~R3~~R4, subject to the allowable exceptions provided.

Evidence may include, but ~~are~~is not limited to:

- ~~Dated archived files,~~
- ~~Historical data,~~
- ~~Other data that demonstrates the ATEC was out of service for less than 24 hours per calendar quarter.~~

~~**R4.** Each Balancing Authority shall compute each of the following using the WECC Interchange Tool (WIT) or its successor electronic confirmation tool, no later than 50 minutes after each hour,~~

~~**4.1.** PII_{hourly};~~

~~**4.2.** PII_{accum};~~

~~**4.3.** Automatic Time Error Correction term (I_{ATEC}).~~

~~*[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*~~

~~**M4.** Forms of acceptable evidence of compliance with Requirement R4 include but are not limited to any one of the following:~~

- ~~Data, screen shots from the WECC Interchange Tool (WIT) or its successor electronic confirmation tool, that demonstrate compliance;~~
- ~~Data, screen~~Screen shots from the Interchange Software;
- Screen shots from ~~internal~~the Balancing ~~Authority tool that demonstrate~~

~~compliance; or,~~

- ~~Data from any other~~Authority's internal software functions such as internal databases, spreadsheets, and displays ~~that demonstrate compliance.~~;

- Dated archive files; and

- Historical data.

R5. Each Balancing Authority shall be able to change its Automatic Generation Control (AGC) operating mode ~~between Flat Frequency (for blackout restoration); Flat Tie-Line (for loss of frequency telemetry); Tie Line Bias; and Tie Line Bias plus Time Error Control (used in ATEC mode),~~ to correspond to current operating conditions. *[Violation Risk Factor: Medium] [Time Horizon: Real-Time Operations]*

M5. ~~Forms of acceptable~~Each Balancing Authority will have evidence ~~of compliance with Requirement~~that its AGC is able to change operating modes to correspond to current operating conditions, as required in R5.

Evidence may include, but ~~are~~is not limited to ~~any one of the following:~~:

- Screen shots from Energy Management System~~,~~; and

- Demonstration using an off-line system.

R6. Each Balancing Authority shall ~~recalculate the PII~~hourly ~~and PII~~accum ~~for the On-Peak and Off-Peak periods whenever adjustments are made to~~ upload hourly ~~Inadvertent~~Actual Net Interchange ~~or ΔTE~~(NI_A) to the Interchange Software no later than 50 minutes after each hour. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M6. ~~Forms of acceptable~~Each Balancing Authority will have evidence ~~of compliance with~~that it uploaded hourly Actual Net Interchange (NI_A) to the Interchange Software no later than 50 minutes after each hour, as required in Requirement R6.

Evidence may include, but ~~are~~is not limited to ~~any one of the following~~:

- ~~Data, screen~~Screen shots from the Interchange Software;

  - ~~Screen~~ shots from the ~~WECC Interchange Tool (WIT) or its successor electronic confirmation tool, that demonstrate compliance;~~

  - ~~Data, screen shots from an~~Balancing Authority's internal ~~Balancing Authority tool that demonstrate compliance with; or,~~

- ~~Data from any other~~ software functions such as internal databases, spreadsheets, and displays ~~that demonstrate compliance.~~;

- Dated archive files; and

- Historical data.

R7. Each Balancing Authority ~~shall make the same adjustment to the PII~~accum ~~as it did for any~~making a month-end ~~meter reading adjustments to Inadvertent~~adjustment shall input that value as part of its Actual Net Interchange~~.~~ (NI_A). *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M7. ~~Forms of acceptable~~ Each Balancing Authority making a month-end adjustment will have evidence ~~of compliance with~~that it input that value as part of its Actual Net Interchange (NI_A), as required in Requirement R7 ~~include but are not limited to any one of the following:~~.

- ~~Data, screen shots from the WECC Interchange Tool (WIT) or its successor electronic confirmation tool, that demonstrate compliance;~~
- ~~Data, screen shots from an internal Balancing Authority tool that demonstrate compliance; or,~~
- ~~Production of data from any other databases, spreadsheets, displays that demonstrate compliance.~~

R8. Each Balancing Authority making a month-end adjustment shall ~~payback~~ensure that value is added to its accumulated Primary Inadvertent Interchange ~~using ATEC rather than bilateral and unilateral payback~~. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

M8.

~~M8.~~ ~~Forms of acceptable~~Each Balancing Authority making a month-end adjustment will have evidence ~~of compliance with Requirement R8 include but are not limited~~that the value was added to ~~historical On-Peak and Off-Peak~~its accumulated Primary Inadvertent Interchange ~~data, data from the WECC Interchange Tool, and ACE data.~~, as required in Requirement R8.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority:

~~The Regional Entity shall serve as~~As defined in the NERC Rules of Procedure, "Compliance Enforcement Authority~~.~~

~~For entities that do not work for~~ " means NERC or the Regional Entity~~,~~ in their respective roles of monitoring and enforcing compliance with the ~~Regional Entity shall serve as the Compliance Enforcement Authority.~~

~~For~~NERC Reliability ~~Coordinators and other functional entities that work for their Regional Entity, the ERO or a Regional Entity approved by the ERO and FERC or other applicable governmental authorities shall serve as the Compliance Enforcement Authority~~Standards.

~~For responsible entities that are also Regional Entities, the ERO or a Regional Entity approved by the ERO and FERC or other applicable governmental authorities shall serve as the Compliance Enforcement Authority.~~

~~**1.1 Compliance Monitoring and Assessment Processes:**~~

~~Compliance Audits~~

~~Self-Certifications~~

~~Spot Checking~~

~~Compliance Investigations~~

~~Self-Reporting~~

~~Complaints~~

1.2. Evidence Retention:

The following evidence retention ~~periods~~period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full ~~-~~-time period since the last audit.

~~Each Balancing~~The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority ~~in the Western Interconnection shall~~ to retain specific evidence for a longer period of time as part of an investigation.

- Each Balancing Authority in the WI shall keep the following records for the preceding calendar year (January – December) plus the current calendar year:
  - Its values ~~of~~for PIIhourly, PIIaccum (On-Peak and Off-Peak), ~~Δ~~ΔTE, and any month-end adjustments ~~for the preceding calendar year (January –~~

~~**December), as well as the current calendar year**~~.

- ~~Each Balancing Authority in the Western Interconnection shall retain the amount of time~~ Documentation illustrating any period(s) during which the Balancing Authority operated without ATEC ~~for the preceding calendar year (January – December), as well as the current calendar year.~~, including the reason ATEC was not in operation.

~~1.2 Additional Compliance Information~~

~~None~~

~~**Table of Compliance Elements**~~

1.3 Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	NA	NA	NA	The Balancing Authority failed to use the Interchange Software as the sole source to calculate ATEC.
~~R1~~**R2.**	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 150%, but was less than or equal to 160% of the previous calendar year's ~~Peak Demand~~peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 160%, but was less than or equal to 170% of the previous calendar year's ~~Peak Demand~~peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 170%, but was less than or equal to 180% of the previous calendar year's ~~Peak Demand~~peak demand or peak generation for generation-only Balancing Authorities.	Following the conclusion of each month each Balancing Authority's absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 180% of the previous calendar year's ~~Peak Demand~~peak demand or peak generation for generation-only Balancing Authorities.
~~R2~~**R3.**	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 90 days of the discovery of the error; but made the	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 120 days of the discovery of the error; but made the	The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 150 days of the discovery of the error; but made the	The Balancing Authority did not recalculate PIIhourly and adjust PIIaccum within 180 days of the discovery of the error.

	required recalculations and adjustments within 120 days.	required recalculations and adjustments within 150 days.	required recalculations and adjustments within 180 days.	
R4.	The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 24 hours, but less than or equal to 72 hours.	The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 72 hours, but less than or equal to 120 hours.	The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 120 hours, but less than or equal to 168 hours.	The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 168 hours.
R5.	N/A	N/A	N/A	The Balancing Authority is not able to change its AGC operating mode to correspond to current operating conditions.
R6.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to two hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to four hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in less than or equal to six hours.	The Balancing Authority failed to upload hourly Actual Net Interchange to the Interchange Software no later than 50 minutes after each hour, but uploaded the required data in more than six hours.
R7.	NA	NA	NA	The Balancing Authority making a month-end adjustment failed to input that value as part of its Net Actual Interchange.
R8.	NA	NA	NA	The Balancing Authority making a month-end

				adjustment failed to add that value to its accumulated Primary Inadvertent Interchange.

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
1	February 4, 2003	Effective Date.	New
1	October 17, 2006	Created Standard from Procedure.	Errata
1	February 6, 2007	Changed the Standard Version from 0 to 1 in the Version History Table.	Errata
1	February 6, 2007	The upper limit bounds to the amount of Automatic Time Error Correction term was inadvertently omitted during the Standard Translation. The bound was added to the requirement R1.4.	Errata
1	February 6, 2007	The statement "The Time Monitor may declare offsets in 0.001-second increments" was moved from TEoffset to TDadj and offsets was corrected to adjustments.	Errata
1	February 6, 2007	The reference to seconds was deleted from the TE offset term.	Errata
1	June 19, 2007	The standard number BAL-STD-004-1 was changed to BAL-004-WECC-01 to be consistent with the NERC Regional Reliability Standard Numbering Convention.	Errata
2	December 19, 2012	Adopted by NERC Board of Trustees.	
2	October 16, 2013	A FERC Letter Order was issued on October 16, 2013, approving BAL-004-WECC-02. This standard will become enforceable on April 1, 2014.	

Version	Date	Action	Change Tracking
3	December 6, 2017	Approved by the WECC Board of Directors.	Five-year review. The project: 1) relocates the Background section to the preamble of the Guidance section, 2) adds On-Peak and Off-Peak parameters in Requirement R1/M1, 3) addresses WECC Interchange Tool software successors throughout, 4) conforms the document to current drafting conventions (R1/M1, R4/M4), and 5) addresses non-substantive syntax and template concerns.
3	February 8, 2018	Adopted by the NERC Board of Trustees.	

~~R #~~	~~Time Horizon~~	~~VRF~~	~~Violation Severity Levels~~			
			~~Lower VSL~~	~~Moderate VSL~~	~~High VSL~~	~~Severe VSL~~

~~R3~~	~~Real-Time Operations~~	~~Medium~~	~~The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 24 hours, but less than or equal to 72 hours.~~	~~The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 72 hours, but less than or equal to 120 hours.~~	~~The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 120 hours, but less than or equal to 168 hours~~	~~The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 168 hours.~~
~~R4~~	~~Operations Assessment~~	~~Medium~~	~~The Balancing Authority did not compute PII_{hourly}, PII_{accum}, and I_{ATEC} within 50 minutes, but made the required calculations in less than or equal to two hours.~~	~~The Balancing Authority did not compute PII_{hourly}, PII_{accum}, and I_{ATEC} within two hours, but made the required calculations in less than or equal to four hours.~~	~~The Balancing Authority did not compute PII_{hourly}, PII_{accum}, and I_{ATEC} within four hours, but made the required calculations in less than or equal to six hours.~~	~~The Balancing Authority did not compute PII_{hourly}, PII_{accum}, and I_{ATEC} within six hours.~~
~~R5~~	~~Real-Time Operations~~	~~Medium~~	~~N/A~~	~~N/A~~	~~N/A~~	~~The Balancing Authority is not able to change its AGC operating mode between Flat Frequency (for blackout restoration; Flat Tie Line (for loss of frequency~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
						telemetry); Tie Line Bias; or Tie Line Bias plus Time Error control (used in ATEC mode).
R6	Operations Assessment	Medium	N/A	N/A	N/A	When making adjustments to hourly Inadvertent Interchange or ΔTE, the Balancing Authority did not recalculate the PII_{hourly} and the $PII_{accum.}$ for the On-Peak and Off-Peak periods.
R7	Operations Assessment	Medium	N/A	N/A	N/A	When making any month-end meter reading adjustments to Inadvertent Interchange, the Balancing Authority did not make the same adjustment to the $PII_{accum.}$

~~R #~~	~~Time Horizon~~	~~VRF~~	~~Violation Severity Levels~~			
			~~Lower VSL~~	~~Moderate VSL~~	~~High VSL~~	~~Severe VSL~~
~~R8~~	~~Operations Assessment~~	~~Medium~~	~~N/A~~	~~N/A~~	~~N/A~~	~~The Balancing Authority paid back Inadvertent Interchange using bilateral and unilateral payback rather than using ATEC.~~

~~**Guidelines and Technical Basis**~~

~~**Background**~~

~~In February 2003, the WECC Automatic Time Error Correction (ATEC) Procedure (Procedure) became effective for all Balancing Authorities in the Western Interconnection. The original intent of the Procedure was to minimize the number of Manual Time Error Corrections in the Western Interconnection. ATEC provides the added benefit of a superior approach over NERC Reliability Standard BAL-004-0 – Time Error Correction for assigning costs and providing for the equitable payback of Inadvertent Interchange. In October 2006, the Procedure became a WECC Criterion. In May 2009, FERC issued Order No.723 that approved Regional Reliability Standard BAL-004-WECC-1 - Automatic Time Error Correction, as submitted by NERC. In addition, the Commission directed WECC to develop several clarifying modifications to BAL-004-WECC-1 using the FERC-approved Process for Developing and Approving WECC Standards. The Effective Date of the BAL-004-WECC-1 standard was July 1, 2009. BAL-004-WECC-1 required Balancing Authorities within the Western Interconnection to maintain Interconnection frequency within a predefined frequency profile and to ensure that Time Error Corrections were effectively conducted in a manner that did not adversely affect the reliability of the Interconnection. In September 2009, WECC received WECC Standards/Regional Criterion Request Form (Request) WECC-0068, which was a request for modification of BAL-004-WECC-1. In July 2010, the chair of the WECC Operating Committee assigned the Request to the Performance Work Group (PWG) for development.~~

~~**Requirement R1:**~~

~~**Premise**: Each~~3	May 30, 2018	FERC Order issued approving BAL-004-WECC-3. Docket No. RD18-2-000. Effective Date October 1, 2018.	
4	March 13, 2024	WECC Board of Directors Approved	This project: 1) expands the existing Background section, 2) creates a Standard-specific definition (Interchange Software); 3) creates a requirement to use the Interchange Software; 4) addresses treatment of Balancing Authorities that do not have a full year of operating data; 5) consolidates and clarifies requirements; and 6) updates the document to NERC's newest templates.

Standard Attachments

Not used.

G. Rationale

Nomenclature Update

To conform to NERC's definitional approach, the legacy term Net Actual Interchange (NAI) was replaced with Actual Net Interchange (NI_A). Net Scheduled Interchange (NSI) was replaced with Scheduled Net Interchange (NI_S). The legacy terms and the updated terms are synonymous.

Requirement R1:

The goal of Requirement R1 is to ensure a consistent ATEC calculation within the WI.

Because ATEC is an automatic process, allowing inconsistent calculation of ATEC will cause imbalance in accumulations.

Requirement R2:

The goal of Requirement R2 is to limit the amount of PII_{accum} that a Balancing Authority can have at the end of each month.

To reach the goal, each Balancing Authority should ensure that the absolute value of its PII_{accum} for both the ~~On-Peak~~on-peak period and the ~~Off-Peak~~off-peak period each individually does not exceed 150% of the previous year's Peak Demand for load-serving Balancing Authorities, and 150% of the previous year's peak generation for generation-only Balancing Authorities. The Balancing Authority is required to keep each PII_{accum} period within the limit. For example, the Balancing Authorities actions may include:

- Identifying and correcting the source of any metering or accounting error(s) and recalculating the hourly Primary Inadvertent Interchange (**PII_{hourly}**) and the PII_{accum} from the time of the error;
- Validating the implementation of ATEC; or
- Setting L_{max} equal to L_{10}.until the PII_{accum} is below the limit in Requirement R1.

~~**Justification:**~~This approach is required because PII_{accum} may grow from month-end adjustments and metering errors, even with the inclusion of I_{ATEC} in the ACE equation.

~~**Goal: To limit the amount of PII_{accum} that a Balancing Authority can have at the end of each month.**~~

~~**Requirement R2:**~~

~~**Premise:**~~ **Requirement R3:**

The goal of Requirement R3 is to promote: 1) the timely correction of errors in the calculation of PII and PII_{accum}, and 2) the accurate, fair, and timely payback of accumulated PII balances.

When a Balancing Authority finds an error in the calculation of its PII, the Balancing Authority needs time to correct the error and recalculate PII and PII_{accum}.

~~**Justification:**~~ Hourly adjustments to hourly Inadvertent Interchange (II) require a recalculation of the corresponding hourly PII value, the corresponding PII_{accum}, and all subsequent PII_{accum} for every hour up to the current hour.

The drafting team selected 90 days as a reasonable amount of time to correct an error and recalculate PII and PII_{accum}, since recalculation of PII and PII_{accum} is not a real-time operations reliability issue. As PII hourly is corrected, then PII_{accum} should be recalculated.

~~**Goal: To**~~**Requirement R4:**

The goal of Requirement R4 is to promote ~~the~~fair and timely ~~correction of errors in the calculation~~payback of ~~PII and~~ PII_{accum}~~.~~ balances by ensuring that ATEC remains in service whenever possible.

~~**Requirement R3:**~~

~~**Premise:**~~ When a Balancing Authority is not participating in ATEC, payback of PII_{accum} is delayed.

~~**Justification:**~~ The limit of 24 hours per quarter discourages a Balancing Authority from withdrawing ATEC participation, for example, for economic gain during selected hours. If the limits were increased to 60 hours, a Balancing Authority could technically withdraw ATEC participation for one hour from Monday to Friday.

~~**Goal**: To promote fair and timely payback of PII_{accum} balances.~~

Requirement ~~R4~~R5:

~~**Premise**: PII_{hourly}, PII_{accum}, and I_{ATEC} should be determined before the next scheduling hour begins.~~

~~**Justification: To promote timely calculations 50 minutes was selected because it is before the next hour ramp begins and permits time**~~A review of NERC Standards conducted by the Version 4 drafting team concluded that this Requirement is best located in a Standard focused on Automatic Generator Control (AGC). However, until an AGC-specific Standard is drafted, the Requirement should not be retired.

The goal of Requirement R5 is to ~~collect~~ensure that AGC has the ~~data and resolve interchange metering values.~~

~~**Goal**: To promote the timely calculation of PII_{hourly}, PII_{accum}, and I_{ATEC}.~~

~~**Requirement R5:**~~
~~**Premise: The ACE equation, and hence the AGC mode, will contain any number of parameters based on system**~~ability to respond to varying operating conditions. ~~**Various AGC modes are identified corresponding to those operating conditions, as well as the specific sets of parameters included in the ACE equation.**~~

Justification: Changing to the proper operating mode, corresponding to current operating conditions, affords proper movement of generating units in response to those conditions. The addition of the ATEC term results in an additional AGC mode and a different set of parameters. The inability to correctly calculate the ATEC term would dictate that AGC not be operated in the ATEC mode.

Goal: To set the AGC mode and calculate ACE in a manner that corresponds to the system operating conditions and to accommodate changes in those conditions.

Requirement R6:

Premise: Not used.

Hourly adjustments to hourly Inadvertent Interchange (II) require a recalculation of the corresponding hourly PII value, the corresponding PII_{accum}, and all subsequent PII_{accum} for every hour up to the current hour.

Justification: As PII_{hourly} is corrected, then PII_{accum} should be recalculated.

Goal: To promote accurate, fair and timely payback of accumulated PII balances.

Requirement R7:

Premise: Month-end meter reading adjustments are made, for example, when a Balancing Authority performs monthly comparisons of recorded month-end Net Actual Interchange (NI_A) values derived from hourly Actual Interchange Telemetered Values against month-end Actual Interchange Register Meter readings.

Justification: Month-end adjustments to II_{accum} are applied as 100% PII_{accum}. 100% was chosen for simplicity to bilaterally assign PII_{accum} to both Balancing Authorities, since the effect of this metering error on system frequency is not easily determined over the course of a month.

Goal: To provide a mechanism by which corresponding month-end II adjustments can be **applied** to PII_{accum}, when such adjustments cannot be attributed to any one hour or series of hours.

Not used.

Requirement R8:

Premise: ATEC includes automatic unilateral payback of Primary Inadvertent Interchange and Secondary Inadvertent Interchange.

Justification: Additional unilateral and bilateral exchanges disturb the balance and distribution between Primary Inadvertent Interchange and Secondary Inadvertent Interchange throughout the Interconnection; thereby stranding Secondary Inadvertent Interchange.

Goal: To not strand Secondary Inadvertent Interchange.

Not used.

~~Version History~~

~~Version~~	~~Date~~	~~Action~~	~~Change Tracking~~
~~1~~	~~February 4, 2003~~	~~Effective Date.~~	~~New~~
~~1~~	~~October 17, 2006~~	~~Created Standard from Procedure.~~	~~Errata~~
~~1~~	~~February 6, 2007~~	~~Changed the Standard Version from 0 to 1 in the Version History Table.~~	~~Errata~~
~~1~~	~~February 6, 2007~~	~~The upper limit bounds to the amount of Automatic Time Error Correction term was inadvertently omitted during the Standard Translation. The bound was added to the requirement R1.4.~~	~~Errata~~
~~1~~	~~February 6, 2007~~	~~The statement "The Time Monitor may declare offsets in 0.001 second increments" was moved from TEoffset to TDadj and offsets was corrected to adjustments.~~	~~Errata~~
~~1~~	~~February 6, 2007~~	~~The reference to seconds was deleted from the TE offset term.~~	~~Errata~~
~~1~~	~~June 19, 2007~~	~~The standard number BAL-STD-004-1 was changed to BAL-004-WECC-01 to be consistent with the NERC Regional Reliability Standard Numbering Convention.~~	~~Errata~~
~~2~~	~~December 19, 2012~~	~~Adopted by NERC Board of Trustees.~~	
~~2~~	~~October 16, 2013~~	~~A FERC Letter Order was issued on October 16, 2013, approving BAL-004-WECC-02. This standard will become enforceable on April 1, 2014.~~	

Version	Date	Action	Change Tracking
3	December 6, 2017	Approved by the WECC Board of Directors.	Five-year review. The project: 1) relocates the Background section to the preamble of the Guidance section, 2) adds On-Peak and Off-Peak parameters in Requirement R1/M1, 3) addresses WECC Interchange Tool software successors throughout, 4) conforms the document to current drafting conventions (R1/M1, R4/M4), and, 5) addresses non-substantive syntax and template concerns.
3	February 8, 2018	Adopted by the NERC Board of Trustees.	
3	May 30, 2018	FERC Order issued approving BAL-004-WECC-3. Docket No. RD18-2-000. Effective Date October 1, 2018.	

WECC
Electric Reliability and Security for the West

Attachment F
Implementation Plan
WECC-0147
BAL-004-WECC-4 ATEC

Implementation Plan

Overview of Procedure

This is a WECC Regional Reliability Standard (RRS).

On November 23, 2021, WECC received WECC-0147 Standard Authorization Request (SAR) with a specific request to address a defect in BAL-004-WECC-3, Requirement R1, addressing the "previous calendar year" for generating units that had not been in operation for a full calendar year.

On December 7, 2021, the WECC Standards Committee (WSC) approved the SAR, approving/assigning the drafting team on March 22, 2022.

Between August 22, 2022, and July 21, 2023, the project was posted four times for comment. The drafting team considered and addressed each comment before the project was balloted, closing on September 29, 2023, with a 100% affirmative ballot. The WECC Board of Directors (Board) approved the project on March 13, 2024.

Overview of Changes

WECC-0147 BAL-004-WECC-4, Automatic Time Error Correction (ATEC): 1) expands the existing Background section, 2) creates a Standard-specific definition (Interchange Software), 3) creates a requirement to use the Interchange Software, 4) addresses treatment of Balancing Authorities that do not have a full year of operating data, 5) consolidates and clarifies requirements, and 6) updates the document to NERC's newest templates.

Proposed Effective Date

The proposed effective date is the first day of the second quarter following regulatory approval.

Justification

As proposed, many of the required tasks are already being performed in the same or similar manner as those currently approved. The new or modified tasks impose a minimal burden achievable in the time window between regulatory approval and the proposed Effective Date.

Impact on Other Documents

None.

This project: 1) adds a Standard-specific definition, applicable only to this RRS, and 2) clarifies that when used, the term "ATEC" is as defined in the WECC Regional Definitions section of the NERC Glossary of Terms Used in Reliability Standards (Glossary).

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Unofficial Comment Form

Regional Reliability Standard
BAL-004-WECC-4

DO NOT use this form for submitting comments. Use the electronic form to submit comments on the proposed modifications to **Regional Reliability Standard**, **BAL-004-WECC-4 (Automatic Time Error Correction)**. The electronic form must be submitted by **8 p.m. Eastern, Tuesday, May 28, 2024.**

Documents and information about this project are available on the WECC's Standards page. If you have questions, contact Reliability Standards Analyst, Kimberlin Harris (via email) or at (404) 446-9794.

Background Information
Proposed Regional Reliability Standard BAL- 004-WECC-4 – Automatic Time Error Correction modifies the current effective regional standard BAL-004-WECC-3 as follows:

1. Expanding the existing Background section
2. Creating a Standard-specific definition (Interchange Software)
3. Creating a requirement to use the Interchange Software
4. Addressing treatment of Balancing Authorities that do not have a full year of operating data
5. Consolidating and clarifying requirements
6. Updating the documents to NERC's newest templates
7. Adding a Standard-specific definition, applicable only to this RRS
8. Clarifying that when used, the term "ATEC" is as defined in the WECC Regional Definitions section of the NERC Glossary of Terms Used in Reliability Standards (Glossary)

The WECC Board of Directors approved the proposed regional standard on March 13, 2024.

NERC Criteria for Developing or Modifying a Regional Reliability Standard
Each regional difference (i.e., Regional Reliability Standard or Variance) shall be: (1) is more stringent than the continent-wide Reliability Standard, including a regional difference that addresses matters that the continent-wide reliability standard does not; or (2) necessitated by a physical difference in the bulk power system. Regional Reliability Standards and Variances shall provide for as much uniformity as possible with Reliability Standards across the interconnected bulk power system of the North American continent. Regional Reliability Standards and Variances, when approved by FERC and applicable authorities in Mexico and Canada, shall be made part of the body of NERC Reliability Standards and shall be enforced upon all applicable Bulk Power System owners, operators, and users within the applicable area, regardless of membership in the region.

The approval process for a proposed Regional Reliability Standard or Variance, or the retirement of an existing standard or Variance, requires NERC to publicly notice and request comment. Comments shall be permitted only on the following criteria (technical aspects of the standard are vetted through the regional standards development process):

Unfair or Closed Process – The Regional Reliability Standard was not developed in a fair and open process that provided an opportunity for all interested parties to participate. Although a NERC-approved Regional Reliability Standards development procedure shall be presumed to be fair and open, objections could be raised regarding the implementation of the procedure.

Adverse Reliability or Commercial Impact on Other Interconnections – The Regional Reliability Standard would have a significant adverse impact on reliability or commerce in other interconnections.

Deficient Standard – The Regional Reliability Standard fails to provide a level of reliability of the Bulk Power System such that the Regional Reliability Standard would be likely to cause a serious and substantial threat to public health, safety, welfare, or national security.

Adverse Impact on Competitive Markets within the Interconnection – The Regional Reliability Standard would create a serious and substantial burden on competitive markets within the interconnection that is not necessary for reliability.

Questions

1. Do you agree that the proposed Regional Reliability Standard was developed in a fair and open process, using the associated Regional Reliability Standards Development Procedure?

   ☐ Yes
   ☐ No

   Comments:

2. Does the proposed Regional Reliability Standard pose an adverse impact to reliability or commerce in a neighboring region or interconnection?

   ☐ Yes
   ☐ No

   Comments:

3. Does the proposed Regional Reliability Standard pose a serious and substantial threat to public health, safety, welfare, or national security?

   ☐ Yes
   ☐ No

   Comments:

4. Does the proposed Regional Reliability Standard pose a serious and substantial burden on competitive markets within the interconnection that is not necessary for reliability?

   ☐ Yes
   ☐ No

   Comments:

5. Does the proposed Regional Reliability Standard meet at least one of the following criteria?

   - The proposed Regional Reliability Standard has more specific criteria for the same requirements covered in a continent-wide standard.
   - The proposed Regional Reliability Standard has requirements that are not included in the corresponding continent-wide standard.
   - The proposed regional difference is necessitated by a physical difference in the Bulk Power System.

   ☐ Yes
   ☐ No

   Comments:

Comment Report

Project Name:	Regional Reliability Standard (WECC) | BAL-004-WECC-4
Comment Period Start Date:	4/10/2024
Comment Period End Date:	5/28/2024
Associated Ballots:	

There were 11 sets of responses, including comments from approximately 23 different people from approximately 12 companies representing 6 of the Industry Segments as shown in the table on the following pages.

Questions

1. Do you agree that the proposed Regional Reliability Standard was developed in a fair and open process, using the associated Regional Reliability Standards Development Procedure?

2. Does the proposed Regional Reliability Standard pose an adverse impact to reliability or commerce in a neighboring region or interconnection?

3. Does the proposed Regional Reliability Standard pose a serious and substantial threat to public health, safety, welfare, or national security?

4. Does the proposed Regional Reliability Standard pose a serious and substantial burden on competitive markets within the interconnection that is not necessary for reliability?

5. Does the proposed Regional Reliability Standard meet at least one of the following criteria?

- **The proposed Regional Reliability Standard has more specific criteria for the same requirements covered in a continent-wide standard.**
- **The proposed Regional Reliability Standard has requirements that are not included in the corresponding continent-wide standard.**
- **The proposed regional difference is necessitated by a physical difference in the Bulk Power System.**

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
BC Hydro and Power Authority	Adrian Andreoiu	1,3,5	WECC	BC Hydro	Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
Portland General Electric Co.	Brooke Jockin	1,3,5,6		Portland General Electric Co.	Brooke Jockin	Portland General Electric	1	WECC
					Dan Mason	Portland General Electric	6	WECC
					Ryan Olson	Portland General Electric	5	WECC
					Adam Menendez	Portland General Electric Co.	3	WECC
Black Hills Corporation	Rachel Schuldt	1,3,5,6		Black Hills Corporation - All Segments	Micah Runner	Black Hills Corporation	1	WECC
					Josh Combs	Black Hills Corporation	3	WECC
					Rachel Schuldt	Black Hills Corporation	6	WECC
					Carly Miller	Black Hills Corporation	5	WECC
					Sheila Suurmeier	Black Hills Corporation	5	WECC

1. Do you agree that the proposed Regional Reliability Standard was developed in a fair and open process, using the associated Regional Reliability Standards Development Procedure?	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ben Hammer - Western Area Power Administration - 1,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation - All Segments	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Brooke Jockin - Portland General Electric Co. - 1,3,5,6, Group Name Portland General Electric Co.	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	

2. Does the proposed Regional Reliability Standard pose an adverse impact to reliability or commerce in a neighboring region or interconnection?

Rachel Schuldt - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation - All Segments

Answer	No
Document Name	

Comment

Regarding R1, will WECC require a specific interchange software tool or will the utility have the option to select what best meets their needs?

Likes 0	
Dislikes 0	

Response

Brooke Jockin - Portland General Electric Co. - 1,3,5,6, Group Name Portland General Electric Co.

Answer	No
Document Name	

Comment

Likes 0	
Dislikes 0	

Response

Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - WECC

Answer	No
Document Name	

Comment

Likes 0	
Dislikes 0	

Response

Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC

Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ben Hammer - Western Area Power Administration - 1,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

3. Does the proposed Regional Reliability Standard pose a serious and substantial threat to public health, safety, welfare, or national security?	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	No

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ben Hammer - Western Area Power Administration - 1,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Brooke Jockin - Portland General Electric Co. - 1,3,5,6, Group Name Portland General Electric Co.	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	

4. Does the proposed Regional Reliability Standard pose a serious and substantial burden on competitive markets within the interconnection that is not necessary for reliability?	
Brooke Jockin - Portland General Electric Co. - 1,3,5,6, Group Name Portland General Electric Co.	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ben Hammer - Western Area Power Administration - 1,6	
Answer	Yes
Document Name	
Comment	
Interchange Software is defined as "The single electronic confirmation tool identified by the Western Electricity Coordinating Council". Requirement R1 indicates that the BA must use the Interchange Software as the sole source of data which is dictated by WECC to calculate ATEC. As with any software that could affect reliability, utilities must be given the option to validate the data quality, availability, and security. R1 provides no recourse if an entity has legitimate reasons for not procuring the software which can include security, data quality, availability, or financial limitations. **It is unclear the justification for the changes in R1.**	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	
Answer	Yes
Document Name	
Comment	
R1 and the definition of "Interchange software". WECC states that it will be a "single electronic confirmation tool" and the BA "shall use the Interchange Software as the sole source of data".	

What tool? OATI? How can it be dictated that a third party public traded software company must be used? A Utility should have a choice of software. What if we moved from using an OATI product and that is the WECC preferred?	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

5. Does the proposed Regional Reliability Standard meet at least one of the following criteria?

- **The proposed Regional Reliability Standard has more specific criteria for the same requirements covered in a continent-wide standard.**
- **The proposed Regional Reliability Standard has requirements that are not included in the corresponding continent-wide standard.**
- **The proposed regional difference is necessitated by a physical difference in the Bulk Power System.**

Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC

Answer	Yes
Document Name	

Comment

PNM has assessed that this standard meets the third criteria bullet point "The proposed regional difference is necessitated by a physical difference in the Bulk Power System." The top two options are N/A as there is no continent-wide standard for BAL-004.

Likes 0	
Dislikes 0	

Response

Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6

Answer	Yes
Document Name	

Comment

Likes 0	
Dislikes 0	

Response

Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC

Answer	Yes
Document Name	

Comment

Likes 0	
Dislikes 0	

Response

Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ben Hammer - Western Area Power Administration - 1,6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation - All Segments	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Brooke Jockin - Portland General Electric Co. - 1,3,5,6, Group Name Portland General Electric Co.	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

WECC
Electric Reliability and Security for the West

Attachment R5
WECC-0147 BAL-004-WECC-4
Automatic Time Error Correction (ATEC)
Response to Comments NERC Posting 1
April 10 through May 28, 2024

NERC Posting 1

Posting

This project was posted for comment at NERC from April 10 through May 28, 2024.

NERC distributed notice for the posting on April 10, 2024. NERC posed the following questions:

1) Do you agree that the proposed regional Reliability Standard was developed in a fair and open process, using the associated regional Reliability Standards Development Procedures?
2) Does the proposed Regional Reliability Standard pose an adverse impact to reliability or commerce in a neighboring region or interconnection?
3) Does the proposed Regional Reliability Standard pose a serious and substantial threat to public health, safety, welfare, or national security?
4) Does the proposed Regional Reliability Standard pose a serious and substantial burden on competitive markets within the interconnection that is not necessary for reliability?
5) Does the proposed Regional Reliability Standard meet at least one of the following criteria?
    a. The proposed Regional Reliability Standard has more specific criteria for the same requirements covered in a continent-wide standard.
    b. The proposed Regional Reliability Standard has requirements that are not included in the corresponding continent-wide standard.
    c. The proposed regional difference is necessitated by a physical difference in the Bulk Power System.

NERC reported receiving "11 sets of responses, including comments from approximately 23 different people from approximately 12 companies representing 6 of the Industry Segments."[1]

Location of Comments

Comments can be viewed in their original format on the WECC-0147 project Home Page, at the "Submit and Review Comments" accordion.[2]

[1] See WECC-0147 Posting 1 BAL-004-WECC-4 – ATEC – Posting 1 – Response to Comments – NERC 45-Day, on the WECC-0147 project Home Page, at the Submit and Review Comments accordion.

[2] Loc. Cit.

Changes in Response to Comment

The WECC-0147 BAL-004-WECC-4, Automatic Time Error Correction (ATEC) Drafting Team (DT) appreciates all those that actively engaged in the standards development process. After reviewing and considering all comments, the DT opted to make no further Substantive changes to the project.

There are two tables for each question addressed. The first table is a summary of the drafting team's responses for that question. The second table includes comments in their original format as provided to WECC by NERC.

Minority View

The minority position posits that requiring all entities to use the Interchange Software is overly restrictive. The DT does not concur, noting that uniformity enhances the ATEC outcome.

Proposed Effective Date

The first day of the second quarter following regulatory approval.

Justification

As proposed, many of the required tasks are already being performed in the same or similar manner as those currently approved. The new or modified tasks impose a minimal burden achievable in the time window between regulatory approval and the proposed Effective Date.

Impact on Other Documents

None.

This project: 1) adds a Standard-specific definition, applicable only to this Regional Reliability Standard (RRS), and 2) clarifies that when used, the term "ATEC" is as defined in the WECC Regional Definitions section of the NERC Glossary of Terms Used in Reliability Standards (Glossary).

Contacts and Appeals

If you feel your comment has been omitted or overlooked, please contact the NERC Standards Department. For questions at the regional level, please contact W. Shannon Black, WECC Consultant, at (503) 307-5782. In addition, there is a WECC Reliability Standards appeals process.

Summary of Responses

Question 1

1) Do you agree that the proposed Regional Reliability Standard was developed in a fair and open process, using the associated regional Reliability Standards Development Procedures?

All respondents agreed the project was developed using a fair and open process. **Open and Transparent Process** This project is the result of approximately 21 publicly noticed and convened meetings during which the public was invited to comment on the project. On December 7, 2021, the WECC Standards Committee (WSC) reviewed and approved the WECC-0147 BAL-004-WECC-4, Automatic Time Error Correction (ATEC) Standard Authorization Request (SAR), at the duly noticed public meeting. Per the WSC's request, WECC solicited[3] and the WSC approved[4] a standards drafting team (DT). This project was posted for public comment on four occasions at WECC,[5] prior to a single 45-day posting at NERC,[6] resulting from 16 publicly noticed drafting team meetings. The drafting team meetings were augmented by a publicly noticed WECC Standards Briefing[7], held prior to opening a WECC ballot.[8] (For dates, see the Project Roadmap located on this project's Home Page at the NERC Filing accordion.)[9]	

[3] January 26, 2022, and February 9, 2022.

[4] March 22, 2022.

[5] Posting 1 (August 4 through September 21, 2022), Posting 2 (December 12, 2022, through January 11, 2023), Posting 3 (April 6 through May 8, 2023), and Posting 4 (June 21 through July 21, 2023).

[6] April 10 through May 28, 2024.

[7] September 13, 2023.

[8] Open: September 14, 2023; Closed: September 29, 2023.

[9] WECC-0147 Project Page: https://www.wecc.org/Standards/pages/wecc-0147.aspx

After reaching a 100% quorum: 1) this project's publicly solicited Ballot Pool[10] approved this project with a 100% affirmative ballot,[11] 2) the WSC publicly vetted its decision to approve the Procedural machinations of this project[12], 3) and the WECC Board of Directors publicly approved the project for further regulatory review at NERC/FERC. [13] All of these forums are public. Public comment was invited in every forum.	

[10] August 21 through September 6, 2023.

[11] September 14 through September 29, 2023, https://www.wecc.org/Reliability/WECC-0147%20BAL-004-WECC-4%20-%20ATEC%20-%20Final%20Ballot.pdf

[12] December 5, 2023.

[13] March 13, 2024.

Question 1 – Original Format

Do you agree that the proposed regional Reliability Standard was developed in a fair and open	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy – 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ben Hammer - Western Area Power Administration - 1,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation - All Segments	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Brooke Jockin - Portland General Electric Co. - 1,3,5,6, Group Name Portland General Electric Co.	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	

Summary of Responses

Question 2

2) Does the proposed Regional Reliability Standard pose an adverse impact to reliability or commerce in a neighboring region or interconnection?

Question 2 asks whether the proposed standard poses "an adverse impact on reliability or commerce in a neighboring region or interconnection." Of the 11 respondents, only Berkshire Hathway – NV Energy (NV) said "yes." At the threshold, it is unclear how a Regional Reliability Standard used only in the Western Interconnection could have any adverse impact on commerce in a neighboring region or interconnection. Whereas NV did not provide the DT with any issues to address, the DT made no changes. Although outside the scope of the question, Black Hills asked whether WECC would require use of the Interchange Software. The DT responded, "yes." See the team's response to Black Hills for further detail.	

Question 2 – Original Format

Rachel Schuldt - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Regarding R1, will WECC require a specific interchange software tool, or will the utility have the option to select what best meets their needs?	
Likes 0	
Dislikes 0	
Response	
WECC will designate the software; the applicable entities are to use the software. In response to Black Hills' query regarding the Interchange Software, R1 references the standard-only definition of the Interchange Software. Per the standard-only definition, WECC will identify the "single…tool…*to be used by all* Balancing Authorities throughout the Western Interconnection (WI)." (Emphasis added.) As is customary, the "how to" process by which the software will be identified is not in the standard. The DT also points Black Hills to Requirement R1: "Each Balancing Authority shall use the Interchange Software as the sole source of data to calculate its ATEC." ATEC lacks precision unless each entity uses the same software.	
Brooke Jockin - Portland General Electric Co. - 1,3,5,6, Group Name Portland General Electric Co.	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 – WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 – WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ben Hammer - Western Area Power Administration - 1,6	
Answer	No
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 – WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 – WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	No
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy – 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Although NV Energy opines that the proposed standard poses "an adverse impact to reliability or commerce in a neighboring region or interconnection," NV does not specify any concerns here nor did NV raise any concerns during the estimated 21 public meetings during which the standard was developed, nor the mandatory Standards Briefing prior to balloting. The record shows that NV did not enter into the Ballot Pool nor engage the WSC or WECC Board of Directors regarding this project. As such, the NV has not provided the DT with anything to address.	

Summary of Responses

Question 3

3) Does the proposed Regional Reliability Standard pose a serious and substantial threat to public health, safety, welfare, or national security?

Question 3 asks whether the proposed standard poses "a serious and substantial threat to public health, safety, welfare, or national security." Of the 11 respondents, only Berkshire Hathway – NV Energy (NV) said "yes." Whereas NV did not provide the DT with any issues to address, the DT made no changes.	

Question 3 – Original Format

Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	No

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ben Hammer - Western Area Power Administration - 1,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Brooke Jockin - Portland General Electric Co. - 1,3,5,6, Group Name Portland General Electric Co.	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Although NV Energy opines that the proposed standard poses "a serious and substantial threat to public health, safety, welfare, or national security," NV does not specify any concerns here nor did NV raise any concerns during the estimated 21 public meetings during which the standard was developed, nor the mandatory Standards Briefing prior to balloting. The record shows that NV did not enter into the Ballot Pool nor engage the WSC or WECC Board of Directors regarding this project. As such, NV does not provide the DT with anything to address.	

Summary of Responses

Question 4

4) Does the proposed Regional Reliability Standard pose a serious and substantial burden on competitive markets within the interconnection that is not necessary for reliability?

Question 4 asks whether the proposed standard poses "a serious and substantial burden on competitive markets" within WECC.

Of the 11 respondents, Western Area Power Administration (Western), Tucson Electric Power (Tucson), and Berkshire Hathaway – NV Energy (NV) posit that the standard poses a "serious and substantial burden on competitive markets" within WECC.

1) Lack of Engagement

A review of the record indicated that none of the three entities engaged in the standard development process, even though:

- The project was posted for Substantive comment on four occasions,
- Development of the project spanned 11 months,
- The entities could have participated during any of the 21 publicly held and noticed meetings,
- Entities were publicly invited via the Standards Email List (SEL) to join a WECC Ballot Pool wherein they could cast a "no" vote with accompanying narrative for the DT to address prior to reaching NERC.

(Please see Question 1 for further detail.)

2) FERC Order 672

None of three respondents participated in the ERO's Reliability Standard development process.

The DT notes FERC Order 672, P334:

> Per FERC Order 672, "in considering whether a proposed Reliability Standard meets the legal standard of review, we will entertain comments about whether the ERO implemented its Commission-approved Reliability Standard development process for the development of the particular proposed Reliability Standard in a proper manner, especially whether the process was open and fair. *However, we caution that we will not be sympathetic to arguments by interested parties that choose, for whatever reason, not to participate in the ERO's Reliability Standard*

development process if it is conducted in good faith in accordance with the procedures approved by the Commission. (Emphasis added.) Order No. 672 at P 334

3) Substantive Queries Out of Time

Western

Western states, as "with any software that could affect reliability, utilities must be given the option to validate the data quality, availability, and security." Noting that Western did not engage in the standards development process, the DT offers the following.

As to validation…

The standard-specific definition in conjunction with Requirement R1 does not prohibit the applicable entity from using any other *secondary* software it chooses to "validate the data quality" (Western) for that entity. Validation by definition is a secondary task; whereas the Interchange Software is designed to be the "primary means for confirmation and creation of the final record primary"[14] for calculating ATEC.

The proposed definition and Requirement R1 were first introduced in this project during Posting 1 in *August 2022,* with refinements being added in Posting 2, and Posting 3, receiving no further comments or changes in Posting 4.

In Posting 1, the DT stated, "The definition is proposed to add clarity and unanimity as to which software product is to be used *to calculate ATEC." (Emphasis added.)* As for the Requirement, its purpose is narrowly limited "*to calculate…ATEC." (Emphasis added.)* This is buttressed in the proposed rationale section for R1 stating, "The goal of Requirement R1 is to ensure a consistent ATEC calculation…[b]ecause…allowing inconsistent calculation of ATEC will cause imbalance in accumulations."

Per the 100% affirmative ballot, the WECC Ballot Pool charged WECC with selecting the appropriate product on behalf of those using the WECC ATEC calculation. As is customary, the standard does not specify "how" WECC will complete that task.

As to availability and security…

[14] Standard-specific definition.

Western raises concerns regarding "availability, and security."

As with any standard, the document itself is not designed to list every eventuality (availability and/or security), nor is it designed to explain "how" the standard should be implemented, or what would constitute compliance/non-compliance with the standard. Rather, the standard is designed to require the end result – consistency in calculating ATEC. It achieves that goal by requiring all Balancing Authorities to use the Interchange Software to calculate ATEC.

When considering availability, the standard-specific definition includes the phrase, "during all periods when the Interchange Software is available." If the software is not available, by default and definition, it cannot be used.

For example, if the software "fails to function as designed,"[15] that factor could deem the software unavailable. If the software suffers from "catastrophic…failure," that could deem the software unavailable. If the software is not accessible due to "catastrophic hardware…failure," the software might be deemed unavailable. And most certainly, if the software fell prey to a security breach, a reasonable interpretation of such an event could be that the software "fails to function as designed." These examples are offered for illustration only. Ultimately, the enforcement entity would decide the matter.

To reiterate, as with any standard, the standard itself is not intended to list every possible contingency (e.g., system malfunctions and/or software security issues), explain how the applicable entity should achieve the desired reliability goal, or mandate what constitutes compliance or non-compliance. Rather the standard is designed to elicit a consistent reliability goal – that of calculating a consistent ATEC.

Tucson

Tucson asks which tool is the Interchange Software tool. Noting that Tucson did not engage in the standards development process, the DT offers the following.

[15] Loc. Cit.

The standard does not contain a statement as to which software *product* will be used; rather, it simply states WECC will "identify" the tool. As is customary, the identification process ("how to") by which WECC will make that determination is not contained in the standard. To Tucson's hypothetical, if OATI (as currently used in the Interconnection) were no longer offering services needed to fulfill the standard's requirements, WECC would still be charged with identifying the "single electronic confirmation tool…used by all Balancing Authorities…as the primary means for confirmation and creation of the final [ATEC] record." (Definition) **NV** As to NV Energy, that entity contents that the standard poses "a serious and substantial burden on competitive markets" within WECC. Noting that NV did not engage in the standards development process, nor specify any issue for the DT to address, the DT opted to make no further changes.	

Question 4 – Original Format

Brooke Jockin - Portland General Electric Co. - 1,3,5,6, Group Name Portland General Electric Co.	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	No

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ben Hammer - Western Area Power Administration - 1,6	
Answer	Yes
Document Name	
Comment	
Interchange Software is defined as "The single electronic confirmation tool identified by the Western Electricity Coordinating Council." Requirement R1 indicates that the BA must use the Interchange Software as the sole source of data which is dictated by WECC to calculate ATEC. As with any software that could affect reliability, utilities must be given the option to validate the data quality, availability, and security. R1 provides no recourse if an entity has legitimate reasons for not procuring the software which can include security, data quality, availability, or financial limitations. It is unclear the justification for the changes in R1.	
Likes 0	
Dislikes 0	
Response	
See above response to Black Hills. ATEC lacks precision unless each entity uses the same software..	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	
Answer	Yes
Document Name	
Comment	
R1 and the definition of "Interchange software". WECC states that it will be a "single electronic confirmation tool" and the BA "shall use the Interchange Software as the sole source of data."	

What tool? OATI? How can it be dictated that a third party public traded software company must be used? A Utility should have a choice of software. What if we moved from using an OATI product and that is the WECC preferred?	
Likes 0	
Dislikes 0	
Response	
See above. ATEC lacks precision unless each entity uses the same software.	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
See above.	

Summary of Responses

Question 5

5) Does the proposed Regional Reliability Standard meet at least one of the following criteria?
   a. The proposed Regional Reliability Standard has more specific criteria for the same requirements covered in a continent-wide standard.
   b. The proposed Regional Reliability Standard has requirements that are not included in the corresponding continent-wide standard.
   c. The proposed regional difference is necessitated by a physical difference in the Bulk Power System.

All 11 respondents agreed that the standard met the above Question #5 criteria. The DT thanks all of those that devoted their time, talents, and attention to the standard development process.	

Question 5 – Original Format

Casey Perry - PNM Resources - Public Service Company of New Mexico - 1,3 - WECC	
Answer	Yes
Document Name	
Comment	
PNM has assessed that this standard meets the third criteria bullet point "The proposed regional difference is necessitated by a physical difference in the Bulk Power System." The top two options are N/A as there is no continent-wide standard for BAL-004.	
Likes 0	
Dislikes 0	
Response	
The DT thanks PNM for its time, talents, and continued involvement in the standards development process.	
Joanne Anderson - Public Utility District No. 2 of Grant County, Washington - 1,4,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jessica Lopez - APS - Arizona Public Service Co. - 1,3,5,6	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Berkshire Hathaway - NV Energy - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Ben Hammer - Western Area Power Administration - 1,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1,3,5, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mia Wilson - Southwest Power Pool, Inc. (RTO) - 2 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldt - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation - All Segments	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Brooke Jockin - Portland General Electric Co. - 1,3,5,6, Group Name Portland General Electric Co.	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	

Exhibit F

Standard Drafting Team Roster for Project WECC-0147

BAL-004-WECC-3

WECC
Electric Reliability and Security for the West

Attachment L
Drafting Team Roster
WECC-0147
BAL-004-WECC-4 ATEC

Drafting Team Roster

Below please find a biographical snapshot for the members of the WECC-0147 BAL-004-WECC-4, Automatic Time Error Correction (ATEC) Five-year Review Drafting Team.

Name	Qualifications
David Kirsch, Bonneville Power Administration	Presently employed by the Bonneville Power Administration (BPA) as an electrical engineer in the Technical Operation Controls group. Mr. Kirsch's core work relates to Automatic Generation Control, Balancing Authority management, and the accompanying NERC and WECC BAL standard implementation and compliance. Mr. Kirsch has provided solid, functional solutions to AGC issues in the Technical Operation Controls area for the last 13 years. He has worked for BPA for 21 years and has been an engineer in the utility industry for 32 years. Experience and Education: • Member of the WECC-0124 BAL-004-WECC-3 Drafting Team in 2016. • Member of the WECC Performance Work Group Resources Subcommittee since 2015. This work group discusses and analyzes performance issues in the Western Interconnection, of which some topics of discussion are Primary Inadvertent Interchange, time error, and ATEC. • As one of BPA's NERC BAL-001, 002, 005 and BAL-002-WECC and BAL-004-WECC SMEs, he ensures reliability compliance for BPA by providing expert analysis, keeping current with industry trends, and participating in standards development activities. • Coordinates across multiple technical groups to consolidate BPA's agency experience in Balancing Authority management and Contingency Reserves. Obtained electrical engineering degree from Portland State University.

Don Kovacs, BC Hydro	Presently employed by British Colombia Hydro (BC) with responsibilities for Automatic Generator Control (AGC) compliance with BAL standards. With 25 years' experience in the utility industry, Mr. Kovacs has experience in Emergency Management System (EMS) programming focusing on AGC and BA operations. Mr. Kovacs implemented Automatic Time Error Correction (ATEC) for BC from its onset to present including production of compliance evidence. Mr. Kovacs holds a Bachelor of Science degree in electrical engineering and is a registered Professional Engineer in British Columbia.
Kathy Downey, PacifiCorp	Presently employed with PacifiCorp with over 15 years of experience serving as PacifiCorp's representative to WECC's ISAS, MIC, and OC, plus participation on multiple drafting teams. Ms. Downey has expertise in the area of Interchange Scheduling, the Interchange Scheduling and Accounting Sub-Committee (ISAS), the Market Interface Committee (MIC), the Operating Committee, and Federal Energy Regulatory Commission (FERC) Order 764. Currently, she is serving as PacifiCorp's representative on the Operating Committee and ISAS.
Kokou Agbassekou, California Independent System Operator	Presently employed by the California Independent System Operator (CAISO) 15 years of experience including Operations Compliance Analyst and Emergency Response Coordinator, Control Room Operator-in-training, Operations Engineer, Real-Time Interchange Scheduler, System Operations Specialist, and currently Reliability Coordinator (RC) West Western Interconnect Tool (WIT) Interconnection Administrator in charge of Delta Time Error (DTE) to include daily monitoring, Primary Inadvertent recording in the West, WIT Schedule Change. Mr. Agbassekou is a member and attendee of multiple WECC and other working groups such as ISAS, PWG, WITWG, ATFWG, USF, ECCWG. Based on those roles, he is familiar with the primary inadvertent data, the Delta Time Error calculation and Time Error Correction process in the West using ATEC. In his current role in Operations Compliance, his team is responsible for compliance on BAL-004-WECC-3, INT-006-5, INT-009-3, TOP-003 and IRO-010, among other standards, for both CAISO Balancing Authority and RC West.
Rich Hydzik, Avista	Rich Hydzik is a Senior Transmission Operations Engineer at Avista. He has worked in System Operations since 2004 with responsibilities for operational powerflow studies, coordination of regional contingency

	reserve programs, system operating procedures, and organizational compliance with various NERC BAL, INT, PRC, TOP, and VAR standards, and system operator training. Prior to working in System Operations, he was a system protection engineer for ten years on generation, distribution, and transmission (69kV through 500kV) applications from design to field commissioning. He worked for three years as a transmission system planning engineer. Mr. Hydzik holds a Bachelor of Science degree with a concentration in electrical engineering from Gonzaga University and is a registered Professional Engineer in the state of Washington.
Sean Erickson, Western Area Power Administration	Presently employed by the Western Area Power Administration (WAPA) as a Senior Power Operations Specialist. His qualifications include: • Two years of experience as a WECC Reliability Coordinator (2009–2011); • Two years of experience as a WECC Reliability Coordination Operations Engineer (2007–2009); • Four years of experience as an Operations Engineer (2011–2015); • Serving as the Transmission Alternate on the WECC Operating Committee as well as the WECC Ballot Body representative for both WECC and NERC; • Previous member of the WECC Performance Work Group during the BAL-001 field trial evaluations; • Previous member of the Path Operator Task Force (POTF) (after September 8, 2011, NERC/FERC findings and mitigation regarding path operations) and the POTF—Implementation Team for the operational adoption of the POTF findings; and • Contributor to retiring TOP-007-WECC-1a, System Operating Limits.
Craig Figart **Avista** **(Augmentee)**	Presently employed by Avista, serving as manager of Avista's Supervisory Control and Data Acquisition (SCADA) systems. Mr. Figart did not seek assignment to this team due to time constraints at his employment; however, he actively participated in a supporting role to the team.