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North American Electric Reliability Corporation)
)

Docket No.

**JOINT PETITION OF THE
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION AND
WESTERN ELECTRICITY COORDINATING COUNCIL FOR APPROVAL OF
RETIREMENT OF REGIONAL RELIABILITY STANDARD BAL-002-WECC-3**

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 for Commission approval the retirement of Regional Reliability Standard BAL-002-WECC-3 – Contingency Reserve.

Regional Reliability Standard BAL-002-WECC-3 requires applicable WECC entities to maintain reserves at levels that exceed those required under the continent-wide Reliability Standard BAL-002-3 – Disturbance Control Standard – Contingency Reserve for Recovery from a Balancing Contingency Event. Following a recent review of the regional standard, WECC identified that no technical basis supports the continued applicability of the standard, and that rather than advance reliability in the Western Interconnection, the regional standard may be presenting unnecessary challenges. WECC concluded that the retirement of Regional Reliability Standard BAL-002-WECC-3 would enhance reliability in the Western Interconnection by allowing resources that are currently required to be held as excess reserves to be used more

¹ 16 U.S.C. § 824o.

² 18 C.F.R. § 39.5 (2026).

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) [hereinafter ERO Certification Order].

efficiently to support reliable system operations, particularly as the resource mix continues to change with increasing levels of variable generation from Inverter-Based Resources (“IBR”), as well as serve other important public interests.

For these reasons, which are explained more fully in this filing and the WECC Contingency Reserve Request to Retire White Paper included as Exhibit B,⁴ NERC and WECC request that the Commission approve the retirement of currently effective Regional Reliability Standard BAL-002-WECC-3 as just, reasonable, not unduly discriminatory, and in the public interest. Retirement of this unnecessary regional standard would be consistent with the Administration’s Executive Order directing agencies to reduce unnecessary regulations.⁵

As required by Section 39.5(a) of the Commission’s regulations,⁶ this petition presents the technical basis and purpose for retirement of the Regional Reliability Standard, and a summary of the development history (Exhibit C). The NERC Board of Trustees adopted the proposal to retire the Regional Reliability Standard on December 5, 2025.

I. SUMMARY

The purpose of currently effective Regional Reliability Standard BAL-002-WECC-3 is to specify the quantity and types of Contingency Reserve⁷ required to ensure reliable operation of the

⁴ WECC, Contingency Reserve Request to Retire (Jan. 2025) [hereinafter White Paper].

⁵ Exec. Order No. 14192, 90 Fed. Reg. 9065 (Jan. 31, 2025).

⁶ 18 C.F.R. § 39.5(a).

⁷ Contingency Reserve is defined in the *NERC Glossary* as:

The provision of capacity that may be deployed by the Balancing Authority to respond to a Balancing Contingency Event and other contingency requirements (such as Energy Emergency Alerts as specified in the associated EOP standard). A Balancing Authority may include in its restoration of Contingency Reserve readiness to reduce Firm Demand and include it if, and only if, the Balancing Authority:

- is experiencing a Reliability Coordinator declared Energy Emergency Alert level, and is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan.
- is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan.

Western Interconnection under normal and abnormal conditions. The standard consists of four requirements. Requirement R1 provides each Balancing Authority and each Reserve Sharing Group to maintain a minimum amount of Contingency Reserve composed of any combination of a list of specified reserve types. Requirement R2 was retired with the approval of BAL-002-WECC-3 in Order No. 876.⁸ Requirements R3 and R4 require entities to maintain a minimum amount of Operating Reserve and to restore Contingency Reserves within a set period after an initiating event. Regional Reliability Standard BAL-002-WECC-3 has more stringent requirements than the continent-wide equivalent, Reliability Standard BAL-002-3. Following a recent review of the regional standard, WECC concluded that these more stringent requirements are not benefiting the reliability of the Western Interconnection and instead could be inhibiting reliability across the interconnection, and therefore the regional standard should be retired.

The Contingency Reserve levels and restoration times required by BAL-002-WECC-3 and its predecessors are based on pre-standards practices from the 1990s and were the product of contractual negotiations between the parties, rather than by a technical justification identifying a specific reliability need for the mandated reserve levels.⁹ Those reserve level and restoration requirements, which were largely carried forward unchanged since 1996, exceed the requirements that are applicable to the rest of the continent under the later-developed Reliability Standard BAL-002-3. As a result, entities in the Western Interconnection are required to carry excess reserves and faster restoration times than has been deemed necessary for reliability in the rest of North America. WECC determined that a requirement to hold excess reserves not only hinders the effective deployment of existing generation resources but could exacerbate reliability concerns raised by

⁸ Order No. 876, *WECC Regional Reliability Standard BAL-002-WECC (Contingency Reserve)*, 175 FERC ¶ 61,037 (2021).

⁹ White Paper at 8.

the Commission regarding the reliable integration of variable generation in Order No. 901,¹⁰ wherein FERC addresses the need for continent-wide standards to backstop the operational performance of variable generation (largely IBRs).¹¹

Retirement of Regional Reliability Standard BAL-002-WECC-3 would promote consistency across the interconnections and allow resources, particularly those immediately dispatchable such as hydroelectric generation, to be used more efficiently to support the reliability of the Bulk-Power System as variable IBRs continue to grow among the resource mix. The continent-wide Reliability Standard BAL-002-3 would continue to ensure that entities are required to maintain Contingency Reserve levels determined to be sufficient to support the reliable operation of the Bulk-Power System.

For these reasons, and as discussed more fully herein, NERC and WECC respectfully request the Commission approve the retirement Regional Reliability Standard BAL-002-WECC-3 as just, reasonable, not unduly discriminatory, and in the public interest. The following petition presents the justification for retirement and supporting documentation.

¹⁰ Order No. 901, *Reliability Standards to Address Inverter-Based Resources*, 185 FERC ¶ 61,042 at P 11-15 (2023) [hereinafter Order No. 901].

¹¹ *Id.* At P 24 (“[W]e continue to find that as the resource mix trends towards higher penetrations of IBRs, the need to reliably integrate these resources into the Bulk-Power System is expected to grow, and that the currently effective Reliability Standards do not adequately address IBR reliability risks. The continuing risks that the increasing penetration of IBRs pose to the reliable operation of the Bulk-Power System underscore the need for mandatory Reliability Standards to address these issues on a nationwide basis.”).

II. NOTICES AND COMMUNICATIONS

Notices and communications with respect to this filing may be addressed to the following:¹²

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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) procedural history of BAL-002-WECC-3, and (4) the history of Project WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve.

a. Regulatory Framework

By enacting the Energy Policy Act of 2005,¹³ 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 subject to Commission-approved Reliability Standards.¹⁴ Section 215(d)(5) of the FPA authorizes

¹² 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.

¹³ 16 U.S.C. § 824o.

¹⁴ *Id.* § 824(b)(1).

the Commission to order the ERO to submit a new or modified Reliability Standard.¹⁵ 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.¹⁶

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.¹⁷

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.¹⁸ 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.¹⁹ The Commission must give due weight to the technical expertise of a Regional Entity,

¹⁵ *Id.* § 824o(d)(5).

¹⁶ 18 C.F.R. § 39.5(a).

¹⁷ 16 U.S.C. § 824o(d)(2); 18 C.F.R. § 39.5(c)(1).

¹⁸ 16 U.S.C. § 824o(d)(2) and 18 C.F.R. § 39.5(a).

¹⁹ 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.²⁰

b. WECC Reliability Standards Development Procedure

The proposed retirement of the Regional Reliability Standard was developed in an open and fair manner and in accordance with the Commission-approved WECC Reliability Standards Development Procedures (“RSDP”).²¹ 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 or retire a WECC regional Reliability Standard. NERC posts each regional Variance developed by a Regional Entity for an additional comment period. The NERC Board of Trustees must adopt the proposal for regional Variance before it is submitted to the Commission for approval.

c. Procedural History of BAL-002-WECC-3

As further described in Exhibit B hereto, the Contingency Reserve thresholds in Regional Reliability Standard BAL-002-WECC-3 were originally developed in 1996, when the Western Systems Coordinating Council (“WSCC”) adopted the WSCC Reliability Criteria, Minimum Operating Reliability Criteria (“MORC”). In 1999, the MORC became the WECC Reliability Management System (“RMS”), a contract-based system of accountability that pre-dated

²⁰ *Id.* at P 344.

²¹ The currently effective WECC RSDP was approved by the Commission on September 13, 2021. *See N. Am. Elec. Reliability Corp.*, RR21-4-000 (Sep. 13, 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>.

mandatory standards. As the industry transitioned to mandatory standards and memorialization of legacy operating practices, the criteria and language of the RMS were adapted into several Regional Reliability Standards without substantive revision and one of them was approved as WECC-BAL-STD-002-0, Operating Reserves, in 2007.²² The reserves levels originally established in the MORC remained the same and were carried forward.

In 2013, the Commission approved Regional Reliability Standard BAL-002-WECC-2 – Contingency Reserve in Order No. 789.²³ In approving the regional standard, the Commission found that it contained a more stringent set of requirements than those provided in the continent-wide disturbance control standard in effect at that time, Reliability Standard BAL-002-1 – Disturbance Control Performance.²⁴ In 2017, an interpretation (BAL-002-WECC-2a) was developed and later incorporated into BAL-002-WECC-3, in which Requirement R2 was retired, which was approved by the Commission on April 15, 2021.²⁵

d. Development of the Proposed Retirement of the Regional Reliability Standard

As further described in Exhibit B hereto, WECC determined that Regional Reliability Standard BAL-002-WECC-3 should be retired in accordance with the WECC RSDP. On August 14, 2020, WECC received a Standard Authorization Request seeking to retire Regional Reliability Standard BAL-002-WECC-2a, the effective version of the standard at that time. The request asserted that freeing up reserves from the Contingency Reserve requirement would increase the availability of resources to manage variable generation and accommodate increased IBR

²² *N. Am. Elec. Reliability Corp.*, 119 FERC ¶ 61,260 (2007).

²³ Order No. 789, *Regional Reliability Standard BAL-002-WECC-2 – Contingency Reserve*, 145 FERC ¶ 61,141 at P 1 (2013).

²⁴ *Id.* at P 26.

²⁵ *Supra* note 9, Order No. 876 at P 2 (“...implementation of the continent-wide Reliability Standard BAL-003-1.1 (Frequency Response and Frequency Bias Setting), Requirement R1 makes Requirement R2 redundant.”).

integration in Western Interconnection without diminishing the ability to meet the deployment requirements under the continent-wide Reliability Standard BAL-002-3.

In March 2022, the project was placed in abeyance, and the drafting team was tasked with developing a white paper evaluating the technical basis for retirement of the standard.²⁶ In 2024, the drafting team reconvened and finished developing the white paper.²⁷ WECC posted the white paper for public comment from November 15, 2024 through January 15, 2025. The white paper set forth the drafting team's rationale for retiring the Regional Reliability Standard.

On May 15, 2025 WECC ballot body approved the proposal to retire Regional Reliability Standard BAL-002-WECC-3. The WECC Board of Directors approved the retirement of the Regional Reliability Standard on June 11, 2025. NERC posted the Regional Reliability Standard for a 45-day comment period from September 16, 2025 through October 30, 2025. Most of the comments were favorable to the proposed retirement of the Regional Reliability Standard. A minority commenter raised concerns about significant events that occurred in the Western Interconnection impacting IBR performance that may have benefitted from having additional reserves, and asserted that the more stringent criteria in BAL-002-WECC-3 may have alleviated some of those events.²⁸ The WECC drafting team considered this comment, determining that that there is no technical evidence that the extra reserves improve reliability, but rather it could harm reliability as maintaining excess Contingency Reserves reduces system and operational flexibility.²⁹ The NERC Board of Trustees adopted the proposal to retire Regional Reliability Standard BAL-002-WECC-3 on December 5, 2025.

²⁶ Exhibit C, Summary of Development and Complete Record of Development, Notice of Abeyance.

²⁷ Exhibit B, White Paper.

²⁸ Exhibit C, NERC Development History, Comments Received (AZPS comments).

²⁹ *See e.g.*, Exhibit C, Summary of Development and Complete Record of Development, WECC Response to AZPS comment; White Paper at 13.

IV. JUSTIFICATION FOR RETIREMENT

As discussed in detail in the white paper in Exhibit B, the proposed retirement of Regional Reliability Standard BAL-002-WECC-3 is just, reasonable, not unduly discriminatory or preferential, and in the public interest. Regional Reliability Standard BAL-002-WECC-3 and its predecessors impose more stringent Contingency Reserve requirements for entities in the Western Interconnection than those required under the continent-wide disturbance control standard, Reliability Standard BAL-002-3. In the white paper, WECC concluded that these more stringent requirements have not been shown to provide additional reliability benefits to the Western Interconnection but rather could be inhibiting reliability across the interconnection by reducing operational flexibility and leading to the inefficient use of excess resources.

The retirement of Regional Reliability Standard BAL-002-WECC-3 would increase the availability of reserves currently held as excess Contingency Reserves to better support system operations and manage variable generation concerns.³⁰ Retirement would also increase the restoration timeframe for Contingency Reserves after a contingency event occurs and increase an entity's ability to secure additional resources. Bulk-Power System reliability would continue to be maintained through the continent-wide Reliability Standard BAL-002-3 by requiring sufficient Contingency Reserves are maintained and a restoration timeframe that is compatible with market scheduling practices.

Below is requirement-by-requirement summary explaining why the proposed standard should be retired. For additional support and information, please refer to the white paper, included as Exhibit B, to this filing.

³⁰ *Supra* note 11, Order No. 901 at P 11-15.

a. Retirement of Requirement R1

Requirement R1 of Regional Reliability Standard BAL-002-WECC-3 imposes more stringent Contingency Reserve requirements than the Contingency Reserve requirements in the continent-wide disturbance control standard, Reliability Standard BAL-002-3. Requirement R1 of Reliability Standard BAL-002-3 requires the Balancing Authority and Reserve Sharing Group to have a Contingency Reserve only up to its most severe single contingency (“MSSC”) and does not require Contingency Reserve deployment beyond the MSSC. By contrast, Requirement R1 Part 1.1 of the Regional Reliability Standard requires the Balancing Authority and Reserve Sharing Group to maintain at a minimum the greater amount of Contingency Reserve equal to the loss of the MSSC or the amount of Contingency Reserve equal to the sum of 3% of hourly integrated load and 3% of hourly integrated generation. Because the Contingency Reserve must be the greater of either of these totals, entities could be required to hold reserves beyond that of MSSC. As a result, entities in the Western Interconnection can be required to hold Contingency Reserves that exceed what is required in the other interconnections.

While this regional requirement is more stringent than the continent-wide requirement, WECC has concluded that it is not in fact necessary to ensure or advance reliability in the Western Interconnection. As noted above, the Contingency Reserve thresholds in Regional Reliability Standard BAL-002-WECC-3 are legacy requirements that were carried over from the MORC and long pre-date the development of the continent-wide Reliability Standard BAL-002-3. In its recent analysis of the regional standard, WECC has identified no technical justification or other foundation showing that holding more Contingency Reserves than what is required under Reliability Standard BAL-002-3 enhances the reliability of the Western Interconnection.³¹ WECC,

³¹ See Exhibit B, White Paper at 2.

however, has identified that requiring Contingency Reserves beyond the MSSC reduces the capacity available to meet other reliability needs in the Western Interconnection, such as load and resource balancing in real time.³² A comparison of the hourly Contingency Reserve Requirement (calculated using 3% generation and 3% load) to MSSC, showed that there was more than 5,000 MW of capacity available during the summertime peak hours and between 2,000-2,500 MW during the remaining hours of the year.³³ In application, these excess reserves consist of significant amounts of generation that is dispatchable, frequency responsive, and fast ramping.³⁴ Generation that could be used to meet ramps, support the reliable integration of variable IBRs, or simply meet expected loads is instead committed to contingency reserve capacity that is not available to serve load.³⁵ Instead, these reserves are unused or unloaded generation that are in a state of readiness in case there is sudden loss of loaded generation. As a result, requiring entities to maintain more reserves than the MSSC restricts their ability to meet the immediate balancing needs of the Interconnection, and ultimately detracts from reliability.

Retirement of this requirement in BAL-002-WECC-3 would allow more resources to be deployed more effectively to address real-time balancing needs and would promote a consistent continent-wide approach to Contingency Reserves as set forth in the continent-wide Reliability Standard BAL-002-3.³⁶

b. Requirement R2

Requirement R2 of Regional Reliability Standard BAL-002-WECC-3 was retired when this version of the standard was approved in 2021.³⁷ Requirement R2 was determined to be

³² *See Id.* at 22.

³³ *See Id.* at 16, Figure 1.

³⁴ *See Id.* at 17.

³⁵ *Id.*

³⁶ *Id.* at 22-23.

³⁷ *Supra* note 9, Order No. 876.

redundant as Requirement R1 of the then effective continent-wide Reliability Standard BAL-003.1.1.³⁸ The retirement was supported by the results of a field test WECC conducted to measure the effects of retiring Requirement R2, from which WECC determined that no degradation of performance occurred during the test period, and entities deployed enough reserves for post disturbance Area Control Area recovery.³⁹ A post-implementation informational filing further confirmed that the retirement of Requirement R2 did not have any unexpected, adverse impacts on contingency reserves in the Western Interconnection.⁴⁰

c. Retirement of Requirements R3 and R4

Requirements R3 and R4 of Regional Reliability Standard BAL-002-WECC-3 require the Balancing Authority and Reserve Sharing Group to restore Contingency Reserve within 60 minutes of the event initiating. In contrast, Reliability Standard BAL-002-3 requires the restoration of Contingency Reserve within 90 minutes following *the end* of the Contingency Event Recovery Period.⁴¹ As a result, Regional Reliability Standard BAL-002-WECC-3 requires the performance of the same task 45 minutes earlier than its continent-wide counterpart. This shortened restoration timeframe restricts an entity's ability to secure additional resources and may force entities into transactions in an arbitrarily shortened timeframe.

The 60-minute restoration requirement, like the Contingency Reserve thresholds in Requirement R1, is a legacy provision that was carried over from the MORC. In 1996, when the MORC was developed, resource deployment was more flexible as transactions were bilateral and

³⁸ *Id.* at P 2.

³⁹ *Id.* at PP 12-13.

⁴⁰ *Compliance Filing of the N. Am. Elec. Reliability Corp. and Western Electricity Coordinating Council in Response to Order No. 876*, Docket No. RM19-20-000 (Dec. 15, 2023).

⁴¹ Contingency Event Recovery Period is defined as: "A period that begins at the time that the resource output begins to decline within the first one- minute interval of a Reportable Balancing Contingency Event, and extends for fifteen minutes thereafter."

could be executed more quickly.⁴² However, under today's market practices, transactions take more time to execute as they require advanced schedules and must be submitted and approved well in advance; this limits the ability to replace lost resources on short notice.⁴³ WECC has identified no technical justification that supports a shortened restoration window as enhancing reliability in the Western Interconnection.⁴⁴ Instead, the 60-minute restoration requirement hurts liquidity and arbitrarily limits an entity's time and ability to replace lost resources through market practices, which could result in an entity needing to enter an Energy Emergency Alert 3⁴⁵ to deploy Contingency Reserves in order to serve load.⁴⁶

In contrast, the Contingency Reserve Restoration Period⁴⁷ within the continent-wide Reliability Standard BAL-002-3 allows applicable entities to use normal market scheduling practices to replace lost generation.⁴⁸ For reasons stated more fully in the Commission's proceeding approving that standard, the timeframe described in the Contingency Reserve Restoration Period is adequate for the reliable operation of the Bulk-Power System.⁴⁹ Retirement

⁴² Exhibit B, White Paper at 17.

⁴³ *Id.*

⁴⁴ *Id.* at 16-17.

⁴⁵ Energy Emergency Alert 3 is defined in EOP-011-4 Attachment 1(B)(3) as: ("Firm Load interruption is imminent or in progress. Circumstances: • The energy deficient Balancing Authority is unable to meet minimum Contingency Reserve requirements.").

⁴⁶ *See e.g., Id.* at 17.

From January 2020 through May 2024, WECC recorded 19 Energy Emergency Alert 3s for entities based in the United States, 7 of which involved entities tied to a Reserve Sharing Group. Based on data collected from these events, WECC estimates that up to 9 of the 19 Energy Emergency Alert 3s may not have been necessary if the BAL-002-WECC standard had been retired and only the continent-wide standard was enforceable.

⁴⁷ Contingency Reserve Restoration Period is defined as: ("A period not exceeding 90 minutes following the end of the Contingency Event Recovery Period.").

⁴⁸ Exhibit B, White Paper at 17.

⁴⁹ Order No. 835, *Disturbance Control Standard-Contingency Reserve for Recovery from a Balancing Contingency Event Reliability Standard*, 158 FERC ¶ 61,030 (2017) (Order approving BAL-002-2 and the term Contingency Reserve Restoration Period); *Information Filing of the N. Am. Elec. Reliability Corp. Regarding Implementation of Reliability Standard BAL-002-2*, Docket Nos. RM16-7; RD18-7 (Jan. 20, 2020) at 4 ("NERC found that there were no events reported with additional megawatt losses following Reportable Balancing Contingency Events during the Contingency Reserve Restoration Period.").

of Requirements R3 and R4 in BAL-002-WECC-3 would allow entities in the Western Interconnection more time to restore Contingency Reserve and to use normal established market scheduling practices.⁵⁰

The retirement of Regional Reliability Standard BAL-002-WECC-3 would ensure there is a consistent approach regarding Contingency Reserve restoration requirements across all the interconnections. It would also give entities within the Western Interconnection more time to react to a contingency event and determine how to properly restore their lost resources. Reliability in the Western Interconnection would be maintained under Reliability Standard BAL-002-3 and could be enhanced by allowing more operational flexibility and efficient use of excess resources.

V. EFFECTIVE DATE

NERC and WECC respectfully request that the Commission approve the proposed retirement of the Regional Reliability Standard to become effective on the first day of the first quarter following the effective date of the Commission's order approving the proposed retirement.

⁵⁰ *Id.*

VI. CONCLUSION

For the reasons set forth above, NERC and WECC respectfully request that the Commission approve the retirement of Regional Reliability Standard BAL-002-WECC-3, effective as proposed herein.

Respectfully submitted,

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Date: February 27, 2026

Exhibit A

Regional Reliability Standard

BAL-002-WECC-3

A. Introduction

1. **Title:** Contingency Reserve
2. **Number:** BAL-002-WECC-3
3. **Purpose:** To specify the quantity and types of Contingency Reserve required to ensure reliability under normal and abnormal conditions.
4. **Applicability:**
 - 4.1. **Functional Entities:**
 - 4.1.1 **Balancing Authority**
 - 4.1.1.1 The Balancing Authority is the responsible entity unless the Balancing Authority is a member of a Reserve Sharing Group, in which case, the Reserve Sharing Group becomes the responsible entity.
 - 4.1.2 **Reserve Sharing Group**
 - 4.1.2.1 The Reserve Sharing Group when comprised of a Source Balancing Authority becomes the source Reserve Sharing Group.
 - 4.1.2.2 The Reserve Sharing Group when comprised of a Sink Balancing Authority becomes the sink Reserve Sharing Group.
5. **Effective Date:** Immediately upon receipt of regulatory approval.

B. Requirements and Measures

- R1. Each Balancing Authority and each Reserve Sharing Group shall maintain a minimum amount of Contingency Reserve, except within the first sixty minutes following an event requiring the activation of Contingency Reserve, that is: *[Violation Risk Factor: High] [Time Horizon: Real-time operations]*
 - 1.1. The greater of either:
 - The amount of Contingency Reserve equal to the loss of the most severe single contingency;
 - The amount of Contingency Reserve equal to the sum of three percent of hourly integrated Load plus three percent of hourly integrated generation.
 - 1.2. Composed of any combination of the reserve types specified below:
 - Operating Reserve—Spinning
 - Operating Reserve—Supplemental
 - Interchange Transactions designated by the Source Balancing Authority as Operating Reserve—Supplemental

- Reserve held by other entities by agreement that is deliverable on Firm Transmission Service
 - A resource, other than generation or load, that can provide energy or reduce energy consumption
 - Load, including demand response resources, Demand-Side Management resources, Direct Control Load Management, Interruptible Load or Interruptible Demand, or any other Load made available for curtailment by the Balancing Authority or the Reserve Sharing Group via contract or agreement.
 - All other load, not identified above, once the Reliability Coordinator has declared an energy emergency alert signifying that firm load interruption is imminent or in progress.
- 1.3.** Based on real-time hourly load and generating energy values averaged over each Clock Hour (excluding Qualifying Facilities covered in 18 C.F.R. § 292.101, as addressed in FERC Order 464).
- 1.4.** An amount of capacity from a resource that is deployable within ten minutes.
- M1.** Each Balancing Authority and each Reserve Sharing Group will have documentation demonstrating its Contingency Reserve was maintained, except within the first sixty minutes following an event requiring the activation of Contingency Reserve.

Part 1.1

Each Balancing Authority and each Reserve Sharing Group will have dated documentation that demonstrates its Contingency Reserve was maintained in accordance with the amounts identified in Requirement R1, Part 1.1, except within the first sixty minutes following an event requiring the activation of Contingency Reserve.

Attachment A is a practical illustration showing how the generation amount may be calculated under Requirement R1.

- Where Dynamic Schedules are used as part of the generation amount upon which Contingency Reserve is predicated, additional evidence of compliance with Requirement R1, Part 1.1 may include, but is not limited to, documentation showing a reciprocal acknowledgement as to which entity is carrying the reserves. This transfer may be all or some portion of the physical generator and is not limited to the entire physical capability of the generator.
- Where Pseudo-Ties are used as part of the generation amount upon which Contingency Reserve is predicated, additional evidence of compliance with Requirement R1, Part 1.1, may include, but is not limited to, documentation accounting for the transfers included in the Pseudo-Ties.

Part 1.2

Each Balancing Authority and each Reserve Sharing Group will have dated documentation that demonstrates compliance with Requirement R1, Part 1.2.

Evidence may include, but is not limited to, documentation that reserves were comprised of the types listed in Requirement R1, Part 1.2 for purposes of meeting the Contingency Reserve obligation of Requirement R1. Additionally, for purposes of the last bullet of Requirement R1, Part 1.2, evidence of compliance may include, but is not limited to, documentation that the reliability coordinator had issued an energy emergency alert, indicating that firm Load interruption was imminent or was in progress.

Part 1.3

Each Balancing Authority and each Reserve Sharing Group will have dated documentation that demonstrates compliance with Requirement R1, Part 1.3. Evidence of compliance with Requirement R1, Part 1.3 may include, but is not limited to, documentation that Contingency Reserve amounts are based upon load and generating data averaged over each Clock Hour and excludes Qualifying Facilities covered in 18 C.F.R. § 292.101, as addressed in FERC Order 464.

Part 1.4

Evidence of compliance with Requirement R1, Part 1.4 may include, but is not limited to, documentation that the reserves maintained to comply with Requirement R1, Part 1.4 are fully deployable within ten minutes.

R2. Reserved.

M2. Reserved.

R3. Each Sink Balancing Authority and each sink Reserve Sharing Group shall maintain an amount of Operating Reserve, in addition to the minimum Contingency Reserve in Requirement R1, equal to the amount of Operating Reserve—Supplemental for any Interchange Transaction designated as part of the Source Balancing Authority’s Operating Reserve—Supplemental or source Reserve Sharing Group’s Operating Reserve—Supplemental, except within the first sixty minutes following an event requiring the activation of Contingency Reserve. [*Violation Risk Factor: High*] [*Time Horizon: Real-time operations*]

M3. Each Sink Balancing Authority and each sink Reserve Sharing Group will have dated documentation demonstrating it maintained an amount of Operating Reserve, in addition to the Contingency Reserve identified in Requirement R1, equal to the amount of Operating Reserve—Supplemental for any Interchange Transaction designated as part of the Source Balancing Authority’s Operating Reserve—Supplemental or source Reserve Sharing Group’s Operating Reserve—Supplemental, for the entire period of the transaction, except within the first sixty minutes following an event requiring the activation of Contingency Reserves, in accordance with Requirement 3.

R4. Each Source Balancing Authority and each source Reserve Sharing Group shall maintain an amount of Operating Reserve, in addition to the minimum Contingency Reserve amounts identified in Requirement R1, equal to the amount and type of

Operating Reserves for any Operating Reserve transactions for which it is the Source Balancing Authority or source Reserve Sharing Group. *[Violation Risk Factor: High]*
[Time Horizon: Real-time operations]

- M4.** Each Source Balancing Authority and each source Reserve Sharing Group will have dated documentation that demonstrates it maintained an amount of additional Operating Reserves identified in Requirement R1, greater than or equal to the amount and type of that identified in Requirement 4, for the entire period of the transaction.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority:

For entities that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

For 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.

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.

1.2. Compliance Monitoring and Assessment Processes:

Compliance Audit

Self-Certification

Spot-Checking

Compliance Investigation

Self-Reporting

Complaint

1.3. Evidence Retention:

The following evidence retention periods 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 Authority and each Reserve Sharing Group shall keep evidence for Requirement R1 through R4 for three years plus calendar current.

1.4. Additional Compliance Information:

- 1.4.1** This Standard shall apply to each Balancing Authority and each Reserve Sharing Group that has registered with WECC as provided in Part 1.4.2 of Section C.

Each Balancing Authority identified in the registration with WECC as provided in Part 1.4.2 of Section C shall be responsible for compliance with this Standard through its participation in the Reserve Sharing Group and not on an individual basis.

- 1.4.2** A Reserve Sharing Group may register as the Responsible Entity for purposes of compliance with this Standard by providing written notice to the WECC: 1) indicating that the Reserve Sharing Group is registering as the Responsible Entity for purposes of compliance with this Standard, 2) identifying each Balancing Authority that is a member of the Reserve Sharing Group, and 3) identifying the person or organization that will serve as agent on behalf of the Reserve Sharing Group for purposes of communications and data submissions related to or required by this Standard.

- 1.4.3** If an agent properly designated in accordance with Part 1.4.2 of Section C identifies individual Balancing Authorities within the Reserve Sharing Group responsible for noncompliance at the time of data submission, together with the percentage of responsibility attributable to each identified Balancing Authority, then, except as may otherwise be finally determined through a duly conducted review or appeal of the initial finding of noncompliance: 1) any penalties assessed for noncompliance by the Reserve Sharing Group shall be allocated to the individual Balancing Authorities identified in the applicable data submission in proportion to their respective percentages of responsibility as specified in the data submission, 2) each Balancing Authority shall be solely responsible for all penalties allocated to it according to its percentage of responsibility as provided in subsection 1) of this Part 1.4.3 of Section C, and 3) neither the Reserve Sharing Group nor any member of the Reserve Sharing Group shall be responsible for any portion of a penalty assessed against another member of the Reserve Sharing Group in accordance with subsection 1) of this Part 1.4.3 of Section C (even if the member of Reserve Sharing Group against which the penalty is assessed is not subject to or otherwise fails to pay its allocated share of the penalty).

- 1.4.4** If an agent properly designated in accordance with Part 1.4.2 of Section C fails to identify individual Balancing Authorities within the Reserve Sharing Group responsible for noncompliance at the time of data submission or fails to specify percentages of responsibility attributable to each identified Balancing Authority, any penalties for noncompliance shall be assessed against the agent on behalf of the Reserve Sharing Group, and it shall be

the responsibility of the members of the Reserve Sharing Group to allocate responsibility for such noncompliance.

- 1.4.5** Any Balancing Authority that is a member of a Reserve Sharing Group that has failed to register as provided in Part 1.4.2 of Section C shall be subject to this Standard on an individual basis.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Balancing Authority or the Reserve Sharing Group that incurs one Clock Hour, during a calendar month, in which Contingency Reserve is less than 100% but greater than or equal to 90% of the required Contingency Reserve amount, with the characteristics specified in Requirement R1.	The Balancing Authority or the Reserve Sharing Group that incurs one Clock Hour, during a calendar month, in which Contingency Reserve is less than 90% but greater than or equal to 80% of the required Contingency Reserve amount, with the characteristics specified in Requirement R1.	The Balancing Authority or the Reserve Sharing Group that incurs one Clock Hour, during a calendar month, in which Contingency Reserve is less than 80% but greater than or equal to 70% of the required Contingency Reserve amount, with the characteristics specified in Requirement R1.	The Balancing Authority or the Reserve Sharing Group that incurs one Clock Hour, during a calendar month, in which Contingency Reserve is less than 70% of the required Contingency Reserve amount, with the characteristics specified in Requirement R1.
R2.	Reserved.			
R3.	The Balancing Authority or the Reserve Sharing Group that incurs one hour, during a calendar month, in which Contingency Reserve is less than 100% but greater than or equal to 90% of the required Operating Reserve amount specified in Requirement R3.	The Balancing Authority or the Reserve Sharing Group that incurs one hour, during a calendar month, in which Contingency Reserve is less than 90% but greater than or equal to 80% of the required Operating Reserve amount specified in Requirement R3.	The Balancing Authority or the Reserve Sharing Group that incurs one hour, during a calendar month, in which Contingency Reserve is less than 80% but greater than or equal to 70% of the required Operating Reserve amount specified in Requirement R3.	The Balancing Authority or the Reserve Sharing Group that incurs one hour, during a calendar month, in which Contingency Reserve is less than 70% of the required Operating Reserve amount specified in Requirement R3.
R4.	The Balancing Authority or the Reserve Sharing Group	The Balancing Authority or the Reserve Sharing Group	The Balancing Authority or the Reserve Sharing Group	The Balancing Authority or the Reserve Sharing Group

	that incurs one hour, during a calendar month, in which Contingency Reserve Operating Reserve is less than 100% but greater than or equal to 90% of the required Operating Reserve amount specified in Requirement R4.	that incurs one hour, during a calendar month, in which Contingency Reserve Operating Reserve is less than 90% but greater than or equal to 80% of the required Operating Reserve amount specified in Requirement R4.	that incurs one hour, during a calendar month, in which Contingency Reserve Operating Reserve is less than 80% but greater than or equal to 70% of the required Operating Reserve amount specified in Requirement R4.	that incurs one hour, during a calendar month, in which Contingency Reserve Operating Reserve is less than 70% of the required Operating Reserve amount specified in Requirement R4.
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D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
1	October 29, 2008	Adopted by NERC Board of Trustees	
1	October 21, 2010	Order issued remanding BAL-002-WECC-1	
2	November 7, 2012	Adopted by NERC Board of Trustees	
2	November 21, 2013	FERC Order issued approving BAL-002-WECC-2. (Order becomes effective 1/28/14.)	
2a	December 1, 2015	Approved by WECC Board of Directors	Clarified resources available for use in Requirement R2
2a	January 24, 2017	FERC approved	The Interpretation provides clarification regarding the types of resources that may be used to satisfy Contingency Reserve.
3	August 15, 2019	Adopted by the NERC Board of Trustees	The Interpretation was removed. Requirement R2 was deleted. Template and formatting were updated. Syntax and verb tense in Guideline section were corrected.
3	April 15, 2021	FERC approved	Docket(s): RM19-20-000 Description: Order No. 876: Final Rule re WECC Regional Reliability Standard BAL-002-WECC-3 (Contingency Reserve) under RM19-20.
3	June 28, 2021	Effective Date of Standard	

Standard Attachments

Attachment A

Attachment A is illustrative only; it is not a requirement. Requirement R1 calls for an amount of Contingency Reserve to be maintained, predicated on an amount of generation and load required in Requirement R1, Part 1.1., specifically:

“1.1 The greater of either:

- The amount of Contingency Reserve equal to the loss of the most severe single contingency;
- The amount of Contingency Reserve equal to the sum of three percent of hourly integrated Load plus three percent of hourly integrated generation.”

Attachment A illustrates one possible way to account for and calculate the amount of generation upon which the Contingency Reserve amount is predicated.

Below is a practical illustration showing how the generation amount may be calculated under Requirement R1 for Balancing Authorities (BA) and Reserve Sharing Groups (RSG).

BA1 / RSG 1	Generation	Part of Generator
Generator 1	300 MWs online	Yes
Generator 2	200 MWs online	Yes
Generator 3 (Pseudo-Tied out to BA2)	100 MWs online	No
Generator 4 QF (has backup contract)	10 MWs online	No
Generator 5 QF in EMS	10 MWs online	Yes
Generator 6	0 MWs online	Yes
<u>Dynamic Schedule to BA2 from BA1¹</u>	<u>(50 MWs)</u>	
Generation	620 MWs	(The sum of gen 1–6)
BA generation (EMS)	510 MWs	(The sum of gen 1, 2, and 5)
Generation to use Under BAL-002-WECC-1	460 MWs**	(The sum of gen 1, 2, and 5 minus Dynamic Schedule)

** Assumes BA1 and BA2 agree on Dynamic Schedule treatment. If no agreement, BA1 would maintain reserves based on 510 MWs Generation.

BA2 / RSG2	Generation	Part of Generator
Generator 11	100 MWs	Yes
Generator 12	100 MWs	Yes
Generator 3 (Pseudo-Tied in from BA1)	100 MWs	Yes
<u>Dynamic Schedule from BA1 to BA2</u>	<u>50 MWs</u>	<u>Yes</u>
Generation	300 MWs	(The sum of gen 11, 12 and 3.)
BA generation (EMS)	300 MWs	(The sum of gen 11, 12 and 3)

¹ Note: This Dynamic Schedule is not the same as the Generator 3 Pseudo-Tie.

Generation to use Under BAL-002-WECC-1 350 MWs** (The sum of gen 11, 12 and 3 plus Dynamic Schedule)

** Assumes BA1 and BA2 agree on Dynamic Schedule treatment. If no agreement, BA1 would have to maintain reserves based on 510MWs Generation and BA2 would determine its generation to be 300 MWs.

Guideline and Technical Basis

A Guidance Document addressing implementation of this standard was filed with Version 2.

Exhibit B

White Paper

Contingency Reserve Request to Retire BAL-002-WECC-3



WECC-0142 BAL-002-WECC-3

Contingency Reserve

Request to Retire

WECC-0142 Drafting Team

01/21/2025

Executive Summary

This document supports and requests full retirement of WECC Regional Reliability Standard (RRS) BAL-002-WECC-3, Contingency Reserve.

In FERC Order No. 672, when considering approval of RRSs, FERC agreed to accept two kinds of regional differences: (1) a regional difference that is more stringent than the continent-wide Reliability Standard, including a regional difference that addresses matters that the continent-wide Reliability Standard does not; and (2) an RRS that is necessitated by a physical difference in the Bulk-Power System.¹

Order 672 also provides authority to retire an RRS.

Since the start of BAL-002-WECC-3 and its predecessors (2007), the original standard and each subsequent iteration have continued as more stringent than the continent-wide equivalent, NERC BAL-002-X, Disturbance Control Standard. Among other things, WECC's BAL-002-WECC has always required most WECC entities to hold more reserves than the continent-wide equivalent. Specifically, BAL-002-WECC-3, Requirement R1.1.1 requires the applicable entity to hold the greater of, either the amount of Contingency Reserve equal to the loss of the most severe single contingency or the amount of Contingency Reserve equal to the sum of 3% of hourly integrated load and 3% of hourly integrated generation.

Though Requirement R1.1.1 was approved in BAL-002-WECC-1, that approval was predicated on distributing burden and the availability of deliverability.² There has never been a technical study proving that holding reserves more than required under NERC BAL-002-X enhances the reliability of the Western Interconnection.

By contrast, as variable generation is added to the Interconnection, there is increasing evidence that holding excess reserves may be inhibiting reliability across the interconnection. FERC's recent Order 901 echoes these concerns, addressing operational and performance concerns for variable resources.

Restated, within the Western Interconnection, applicable entities are holding more reserves than the rest of the continent, even though there is no technical basis for doing so. In FERC Order 693, in which NERC BAL-002-1 was first approved, at P341, FERC states:

341. We believe a continent-wide contingency reserves policy would assure [sic] that there are adequate magnitude and frequency responsive contingency reserves in each Balancing

¹ Order No. 672 at P 331. See also FERC Order 740, P 4 and P 23.

[https://www.nerc.com/pa/Stand/Resources/Documents/FERC'S Criteria for Approving Reliability Standards from Order 672.pdf](https://www.nerc.com/pa/Stand/Resources/Documents/FERC'S%20Criteria%20for%20Approving%20Reliability%20Standards%20from%20Order%20672.pdf)

² FERC Order 740, Remand.



WECC-0142 BAL-002-WECC-3—Contingency Reserve—Request to Retire

Authority. This will improve performance so that no Balancing Authority will be doing *less than its fair share.*" (Emphasis added.)

By extension, retiring BAL-002-WECC-3 in favor of NERC BAL-002-3, ensures that no Balancing Authority will be doing **more** than its fair share.

Further, requiring Balancing Authorities to hold that excess may be inhibiting the integration and use of variable generation. As a result, BAL-002-WECC-3 creates a mandated scenario in which reserves are used inefficiently and withheld from the marketplace.



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Introduction

Per the Standard Authorization Request (SAR) for WECC-0142,³ this document explores the full retirement of WECC RRS BAL-002-WECC-3, Contingency Reserve.

The following will show that, if the standard is retired, reliability will continue to be maintained through NERC BAL-002-3, and may be enhanced as resources being held for contingency reserves may be used more efficiently to support variable generation.

By retiring BAL-002-WECC-3 in favor of NERC BAL-002-3:

- Dispatchable resources can be used to support variable generation, addressing issues raised by FERC in Order 901.
- A more efficient use of resources should negate any current negative impacts on the market, thereby enhancing vital public interests.

As the Procedural History and Development History sections note, BAL-002-WECC-3 is an evolution of pre-standards originating in the 1990s. Never during the estimated 30 years of its existence has there been a technical justification for the values and procedures required in the standard. Rather, the stated values and procedures are the result of generalized negotiations taking place between the parties. Because these values and procedures are negotiated, the content of BAL-002-WECC-3 is the lowest common denominator and does not meet the requirements of FERC Order 672.⁴

Because BAL-002-WECC-2a, Contingency Reserve, Request to Retire Requirement R2 provided the technical support for retiring Requirement R2, arguments in that filing are not revisited here.⁵

³ See WECC-0142 BAL-002-WECC-3, Contingency Reserve, Request to Retire, home page, at the SAR accordion.

⁴ FERC Order 672, P329 and P330.

⁵ Approved by the NERC Board of Trustees on August 15, 2019, filed with FERC on September 9, 2019.



Standard of Review

While the Commission may approve an RRS that is more stringent than a parallel continent-wide standard, the Commission may also retire such a standard.⁶

“While a Regional Entity may propose regional Reliability Standards that address specific, unique regional conditions and circumstances, *such regional Reliability Standards can be retired if those justifications are no longer relevant*. Accordingly, the Commission may approve retirement of a more stringent regional requirement “if the Regional Entity demonstrates that the continent-wide Reliability Standard is sufficient to ensure the reliability of that region.”⁷ (Emphasis added.)

In doing so, the Commission must give due weight to the technical expertise of a Regional Entity, like WECC, that is organized on an interconnection-wide basis with respect to the regional differences applicable to the Western Interconnection.

The technical qualifications of the subject matter experts compiling this paper are provided with this filing, as presented and approved by the WECC Standards Committee (WSC).

⁶ 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. 16 U.S.C. § 824o(d)(2) and 18 C.F.R. § 39.5(a). (See also) Additionally, 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 is,
- (2) necessitated by a physical difference in the Bulk-Power System.

⁷ Version One Regional Reliability Standard for Resource and Demand Balancing, Order No. 740, 75 FR 65964 (Oct. 27, 2010), 133 FERC ¶ 61,063, P 30 (2010). See also: FERC, 18 CFR Part 40, Docket No. RM19-20-000, WECC Regional Reliability Standard BAL-002-WECC-3 (Contingency Reserve), p.5



Procedural History

In 1996, the Western Systems Coordinating Council (WSCC)⁸ adopted the WSCC Reliability Criteria, Minimum Operating Reliability Criteria (MORC). The MORC prescribed levels of reserves that became BAL-002-WECC-3, effective 2021.

In 1999, the MORC became the WECC Reliability Management System (RMS), a contract-based system of accountability that pre-dated mandatory standards.

As the industry approached the onset of mandatory standards (2007) and memorialization of legacy operating practices, the content of the RMS was adapted and approved as BAL-STD-002-0, Operating Reserves (2007). That standard was an attempt to translate the substantive content of the RMS into the sought-after NERC/FERC format of today's reliability standards. The *content* was accepted "as is" with its origins in the 1996 MORC; albeit, the early standard was remanded for remediation, largely on *format* and structural grounds.

In 2013, FERC accepted remediations to BAL-002-WECC-2.

In 2017, an interpretation was added (BAL-002-WECC-2a) and later incorporated into BAL-002-WECC-3, in which Requirement R2 was approved for retirement, with an effective date of August 15, 2019.

In 2025, the Western Interconnection still adheres to similar levels of reserves as it did in 1996. This means that, for over 28 years, the Western Interconnection has held more reserves than the rest of the continent (NERC BAL-002-3) even though there has never been technical justification to do so.

⁸ The Western Systems Coordinating Council (WSCC) was formed in 1967 by 40 power systems to coordinate the planning and operations of the electric system in western North America. The WSCC's goal was to provide reliable power to the public.



Development History (Before 1996 to 2024)

Before 1996, members of the WSCC voluntarily operated the Western Interconnection according to the MORC.⁹ Although the MORC contained provisions for generation control, generation performance, and Contingency Reserve, the MORC provided no technical support for the reserve thresholds and characteristics it set.¹⁰ Rather, the operating thresholds were established by negotiation—not technical analysis. If this approach were adopted today, FERC would likely deny approval of the standard as contrary to FERC Order 672, P329.¹¹

In July and August of 1996, the Western Interconnection experienced two widespread outages resulting from improper vegetation management. The resulting outage reports^{12 13} made several recommendations that would later be adopted in the 1999 WECC RMS.^{14 15} The WECC Operating Committee’s recommendation produced portions of the RMS that later evolved into WECC Standard BAL-STD-002-0, Operating Reserves and, ultimately, BAL-002-WECC-3. Like the other initial

⁹ MORC, Maintenance Coordination: 1. Sharing information. The security and reliability of the interconnected power system depends upon periodic inspection and adequate maintenance of generators, transmission lines and associated equipment, control equipment, communication equipment, relaying equipment, and other system facilities. Entities and coordinated groups of entities must establish procedures and responsibility for disseminating information on scheduled outages and for coordinating scheduled outages of major facilities which affect the security and reliability of the interconnected power system.

¹⁰ Minimum Operating Reliability Criterion, Section 1, Generation Control and Performance

¹¹ FERC Order 672, P329. 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.

¹² The outage reports are available upon request. Western Systems Coordinating Council (WSCC) Disturbance Report for the Power System Outage that Occurred on the Western Interconnection August 10, 1996, as approved by the WSCC Operations Committee on October 18, 1996

¹³ “f. The WSCC Operations Committee shall assess whether the levels and allocation of operating reserves contributed to the severity of this disturbance and implement corrective measures as appropriate.” Western System Coordinating Council Disturbance Report, For the Power System Outages that Occurred on the Western Interconnection on 2 JUL 1996. Approved by the WSCC Operations Committee on September 19, 1996. RMS Outage Report, page 14.

¹⁴ The RMS was approved 1 SEP 1999. WECC Comment Report – WECC Tier 1- RMS Standard – (BAL-STD-002-0) Question 4, Attachment 2, page 9.

¹⁵ “The majority of these standards were specifically developed to address and mitigate main causes of the two major system outages that occurred in the Western Interconnection in July and August of 1996.” Agenda Item 3, Board of Trustees Meeting, March 12, 2007, page 4



standards, the language of the original standard was a translation of the language contained in the RMS.¹⁶

In March 1997, noting that federal remedial legislation could take years to enact, the WSCC trustees created the WSCC RMS Policy Group¹⁷ establishing a contract-based operational system known as the RMS.¹⁸ ¹⁹ In establishing the RMS, the WSCC RMS Policy Group reviewed all NERC and WECC reliability criteria, identified specific criteria deemed critical for reliability management, then moved those criteria into the RMS through a three-phase implementation plan.²⁰

On April 14, 1999, FERC asserted jurisdiction over the RMS.

Between September 1998 and February 2000 (phase two of the three-phase RMS implementation), the WSCC turned the content of the RMS into the first mandatory reliability standards (aka Version Zero, 2007). BAL-SDT-002-0, Contingency Reserve was part of that translation.

On December 22, 2006, WECC submitted a request to NERC to approve, and send to FERC for approval, eight proposed RRSs. WECC referred to the eight proposed standards as its Tier One

¹⁶ WECC states that the proposed regional Reliability Standards, which are exact translations of existing regional criteria, either address matters not addressed in the Commission-approved ERO Reliability Standards or contain more stringent requirements than the ERO standards. (FERC accepted Tier One standards evolving from the RMS. AKA: Tier One Order.) FERC, 119 FERC ¶ 61,260 United States of America, Federal Energy Regulatory Commission, Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications (Issued June 8, 2007), page 19.

¹⁷ Following the enactment of EPAct 2005 and the establishment of mandatory Reliability Standards applicable to all owners, operators, and users of the BPS, WECC sought to translate certain of its existing practices under its RMS reliability criteria into regional Reliability Standards to supplement the continent-wide Reliability Standards the Commission approved in Order No. 693. To that end, WECC established a task force to identify criteria in the RMS that should be binding on all BPS users, owners, and operators in the Western Interconnection, not just the Transmission Operators subject to the RMS. The task force chose eight of the identified criteria, which had the highest priority and could be implemented in the near term for translation into regional Reliability Standards. United States of America Before the Federal Energy Regulatory Commission, North American Electric Reliability Corporation (NERC), Docket No. RM16-10-000, Supplemental Information for Petition of the NERC and WECC for Approval of retirement of Regional Reliability Standard TOP-007-WECC-1a, page 5.

¹⁸ Hearing

¹⁹ Electric Reliability Corporation, Helping Owners, Operators, and Users of the Bulk Power System Assure Reliability and Security for More Than 50 Years, By David Nevius, Senior Vice President 1979–2012, Page 40–41.

²⁰ Hearing



standards originating from the RMS because the proposed standards were translations of standards that were already mandatory within the Western Interconnection as part of the RMS.²¹

Those eight standards—that included Tier One WECC-BAL-STD-002-0 (Operating Reserves)—were near-exact translations of existing WECC criteria that FERC earlier accepted as part of the WECC RMS program.²² Because the content was a near-exact translation, the format did not match that required by NERC/FERC. This would later lead to a remand of BAL-002-WECC-1 to ensure conformity.

On January 9, 2007, NERC provided WECC with a report of its preliminary findings about the request from December 22, 2006, and provided WECC with a list of required remediations.²³ The request largely addressed styles, formats, and corrections to compliance sections. The NERC Board of Trustees approved the Tier One request subject to remediation and sent the eight proposed standards to FERC with a request for approval.

In June 2007, FERC approved WECC's submittal of eight reliability-crucial Tier One standards, thereby transitioning from the RMS system to that of FERC-approved NERC Reliability Standards.²⁴ Although earlier versions lacked technical support, FERC agreed with

“WECC, WIRAB [Western Interconnection Regional Advisory Board] and NERC that approval of [WECC's early BAL] under section 215 would enhance reliability in the Western Interconnection **by making WECC's current practices binding** on all relevant entities in the region and **by strengthening WECC's compliance and enforcement authority.**”²⁵

²¹ North American Electric Reliability Corporation, Docket No. RR07-___-000, III. BACKGROUND ON THE DEVELOPMENT OF THE WECC REGIONAL RELIABILITY STANDARDS, Debra A. Palmer of Schiff/Hardin (1666 K STREET N.W., SUITE 300, WASHINGTON, DC 20006) on March 26, 2007.

²² Loc. Cit. IV. Overview of the Proposed WECC Regional Reliability Standards, page 6.

²³ NERC DECISION APPROVING, WITH CONDITIONS, RELIABILITY STANDARDS PROPOSED BY WESTERN ELECTRICITY COORDINATING COUNCIL, page 2. (Approved by Board of Trustees March 12, 2007)

²⁴FERC Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications, Docket No. RR07-11-000, (Issued June 8, 2007)

²⁵ Tier One Order, p. 43. See also, “The proposed regional Reliability Standards would make eight of those RMS criteria binding on the applicable subset of users, owners and operators of the Bulk-Power System in the United States portion of the Western Interconnection, as identified in each proposed standard. The regional Reliability Standards would supplement rather than replace the Commission-approved Reliability Standards developed by the ERO that will take effect in June 2007. Tier One, p. 10.



Structural Overview of BAL-002-WECC-3

Purpose

The Purpose of currently effective RRS BAL-002-WECC-3—Contingency Reserve is to provide an RRS specifying “the quantity and types of Contingency Reserve required to ensure reliability under normal and abnormal conditions.”²⁶

The NERC Glossary defines Contingency Reserve as:

“The provision of capacity that may be deployed by the Balancing Authority to respond to a Balancing Contingency Event and other contingency requirements (such as Energy Emergency Alerts as specified in the associated EOP standard). A Balancing Authority may include in its restoration of Contingency Reserve readiness to reduce Firm Demand and include it if, and only if, the Balancing Authority:

- is experiencing a Reliability Coordinator declared Energy Emergency Alert level and is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan.
- is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan.”

Applicability

BAL-002-WECC-3 applies to Balancing Authorities (BA), unless the BA is a member of a Reserve Sharing Group (RSG), in which case the RSG becomes the applicable entity.

Requirements

The standard consists of four requirements.

Requirement R1

- Provides that each BA and RSG must maintain a minimum amount of Contingency Reserve, except within the first sixty minutes following an event requiring the activation of Contingency Reserves, and that the Contingency Reserve must consist of any combination of a list of specified reserve types.

Requirement R2

- Reserved. Retired, subject to cyclical field tests.

²⁶ BAL-002-WECC-3, Contingency Reserve, Purpose.



Requirement R3

- Each Sink BA and RSG must maintain an amount of Operating Reserve, in addition to the minimum Contingency Reserve in Requirement R1, equal to the amount of Operating Reserve–Supplemental for any Interchange Transaction designated as part of the Source Balancing Authority’s Operating Reserve–Supplemental or source Reserve Sharing Group’s Operating Reserve–Supplemental, except within the first sixty minutes following an event requiring the activation of Contingency Reserve.

Requirement R4

- Each Source BA and RSG must maintain an amount of Operating Reserve, in addition to the minimum Contingency Reserve amounts identified in Requirement R1, equal to the amount and type of Operating Reserves for any Operating Reserve transactions for which it is the Source BA or RSG.



Reliability will be Maintained

Upon retirement of BAL-002-WECC-3, reliability will be maintained by NERC BAL-002-3, Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing Contingency Event, reinforced by the enhanced availability of resources currently unavailable under BAL-002-WECC-3.

Replacing BAL-002-WECC-3 with NERC BAL-002-3 Mitigates Reliability Gaps associated with Variable Generation

As highlighted by FERC in its Order 901, with the growing amount of variable generation replacing more responsive and dispatchable resources, the industry faces the dilemma of how to support these new resources.²⁷ Unlike traditional resources, much of the new variable generation cannot be quickly dispatched, thus creating a gap in reliability. FERC acknowledged that gap, noting that neither business as usual nor existing reliability standards will remedy this concern. Finally, FERC also recognizes the value that steps taken must apply on a continent-wide basis.²⁸

Replacing BAL-002-WECC-3 with the continent-wide NERC BAL-002-3 takes immediate steps towards meeting FERC's concerns.

In Order 901, FERC states:

“[W]e continue to find that as the resource mix trends towards higher penetrations of IBRs, the need to reliably integrate these resources into the Bulk-Power System is expected to grow, and that the currently effective Reliability Standards do not adequately address IBR reliability risks. *The continuing risks that the increasing penetration of IBRs pose to the reliable operation of the Bulk-Power System underscore the need for mandatory Reliability Standards to address these issues on a nationwide basis.*” (Emphasis added.) Order 901, P24.

When BAL-002-WECC-3 is retired and replaced with NERC BAL-002-3, the amount and type of reserves required to be held back within the Western Interconnection will decrease. That frees those resources to be plied against load. Within the Western Interconnection, a vast majority of these sequestered resources are immediately dispatchable (such as hydro), thus serving as the perfect resource to match the less predictable response of variable generation.

²⁷ FERC Order 901, P11-15, 185 FERC ¶ 61,042, United States of America, Federal Energy Regulatory Commission (FERC), 18 CFR Part 40, Docket No. RM22-12-000; Reliability Standards to Address Inverter-Based Resources, October 19, 2023. Hereafter: Order 901

²⁸ Order 901, P24.



By making these dispatchable resources more operationally available, the secondary benefits may be to bolster the supply of generation to the market. This potential secondary benefit directly addresses vital public interests.²⁹

Dispatchable Resources Contribute Significantly to Essential Reliability Services (ERS) ³⁰

ERSs consist of frequency control, ramping capability, and voltage control.

Frequency control is necessary because the electric grid is designed to operate at a frequency of 60 hertz (Hz). Deviations from 60 Hz can have destructive effects on generators, motors, and equipment of all sizes and types. It is critical to maintain and restore frequency after a disturbance such as the loss of generation. This requires an instantaneous (inertial) response from some resources and a fast response from other resources to slow the rate of fall during the arresting period, a fast increase in power output during the rebound period to stabilize the frequency, and a more prolonged contribution of additional power to compensate for lost resources and bring system frequency back to the normal level. Two NERC Reliability Standards address this:

- BAL-002-3 Disturbance Control Standard—Contingency Reserve from a Balancing Contingency Event
- BAL-003-2 Frequency Response and Frequency Bias Setting

Adequate ramping capability (the ability to match load and generation at all times) is necessary to maintain system frequency. Changes to the generation mix or the system operator's ability to adjust resource output can impact the ability of the operator to keep the system in balance. NERC Reliability Standard BAL-001-2 (Real Power Balancing Control Performance) addresses this issue.

Voltage must be controlled to protect system reliability and move power where it is needed in both normal operations and following a disturbance. Voltage issues tend to be local in nature, such as in sub-areas of the transmission and distribution systems. Reactive power is needed to keep electricity flowing and maintain necessary voltage levels. Several NERC Reliability Standards address voltage control.

Restated, replacing BAL-002-WECC-3 with NERC BAL-002-3 frees dispatchable resources to address FERC-identified reliability gaps created by variable generation, and may bolster vital public interests.

²⁹ "335. 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." (Emphasis added.) Order 693, P35.

³⁰ "Essential Reliability Services (ERS) are the elemental 'reliability building blocks' from resources (generation and demand) necessary to maintain Bulk Power System (BPS) reliability." NERC ERS Task Force – Scope – 2014.

Because adequate levels of reserves are established in NERC BAL-002-3, and supported by BAL-003-2, BAL-002-WECC-3, Requirements R1 through R4 are not needed.

Replacing BAL-002-WECC-3 With NERC BAL-002-3 Provides Sufficient Reserves at a Continent-Wide Level

In the earliest stages of the Western Interconnection's strides to establish adequate Contingency Reserves, the applicable entity's reserves were established by BAL-STD-002-0, Operating Reserves, at 5% of hydro generation and 7% thermal generation (50% spinning and 50% non-spinning).³¹ These thresholds were not technically supported; they were the result of contractual negotiations. Today, such a standard would likely not be approved by FERC as violative of the principles established in FERC Order 672. (See foot note 2.)

As BAL-STD-0-2 was replaced with later iterations of that standard, the result was today's BAL-002-WECC-3, in which the Responsible Entity's reserves are set at:

R1.1.1 "The greater of either:

- The amount of Contingency Reserve equal to the loss of the most severe single contingency;³² (or)
- The amount of Contingency Reserve equal to the sum of three percent of hourly integrated Load plus three percent of hourly integrated generation."

Bullet one of BAL-002-WECC-3 describes the Most Severe Single Contingency, or MSSC.

The MSSC ensures that all entities can recover Area Control Error (ACE) within 15 minutes. The MSSC serves as the upper Contingency Reserve threshold for all interconnections, except the Western Interconnection. Within the Western Interconnection, the levels of reserve set by BAL-002-WECC-3 can exceed that of the rest of the continent that is protected by FERC-approved BAL-002-3. As a result, the Western Interconnection carries an excess of reserve that exacerbates concerns raised by FERC in Order 901 wherein FERC addresses the need for continent-wide standards to backstop the operational performance of variable generation. Comparing NERC BAL-002-3 with BAL-002-WECC-3 illustrates this outcome.

NERC BAL-002-3 states that the BA and the RSG are not subject to compliance with BAL-002-3, R1 for multiple events that exceed the MSSC. NERC BAL-002-3 requires the applicable entity to deploy Contingency Reserve *up to its MSSC*; however, it does not require Contingency Reserve deployment *beyond MSSC*.

³¹ See Attachment - Transition from 5-7 to 3-3, as described in 2005 by Merrill Schultz; see also Attachment - History of WECC Reserve 5-7 Spin Merrill Schultz, March 3, 2005; see also BAL-STD-002-0, Operating Reserves.

³² Also known as the Most Severe Single Contingency (MSSC).



By contrast, BAL-002-WECC-3 requires the applicable entity to maintain a level of Contingency Reserves *exceeding that required under NERC BAL-002-3*, as approved by FERC. Specifically, BAL-002-WECC-3, Requirement R1 requires the applicable entity to carry reserves that equal or exceed the entity's MSSC—beyond that required by BAL-002-3 that adequately serves the balance of the continent. Among other things, this means these valuable dispatchable resources in excess of the MSSC cannot be used to meet FERC's goal of backstopping variable resources as identified in FERC Order 901.

While the application of BAL-002-3 could free resources to enhance reliability, the application of BAL-002-WECC-3 can inhibit reliability when resources are withheld that could otherwise serve load and backstop variable resources.

For example:

Using historical data from January 2020 - May 2024, comparison of the hourly Contingency Reserve Requirement (calculated using 3% generation and 3% load) to the Most Severe Single Contingency (MSSC), the results identified there was more than 5,000 MW of capacity available during the summertime peak hours and between 2,000-2,500 MW during the remaining hours of the year. See figure below.

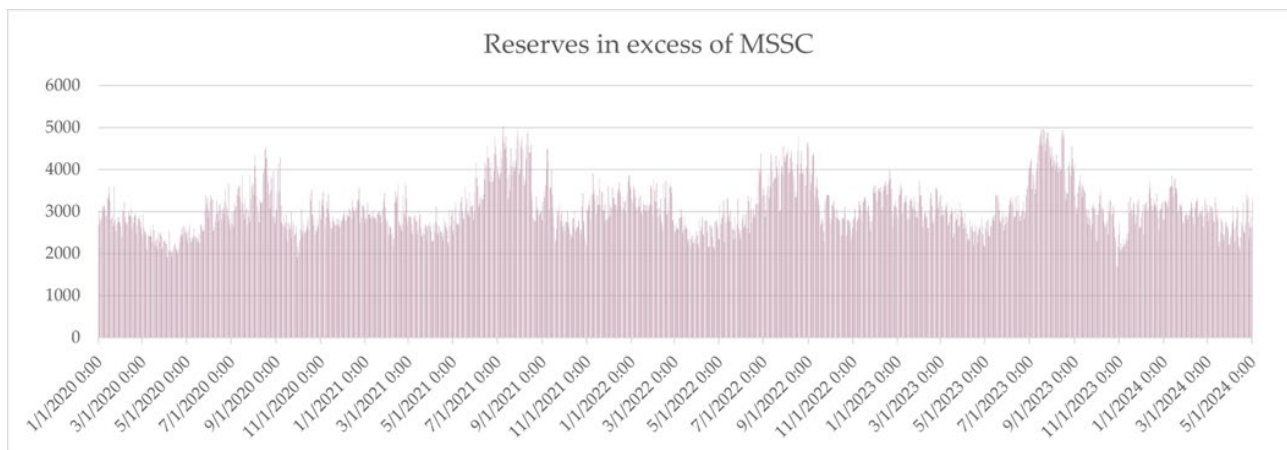


Figure 1: Reserves in excess of MSSC

The Shortened Execution Time of BAL-002-WECC-3 Inhibits Reliability Due to Market Rules in the Western Interconnection

BAL-002-WECC-3, Requirements R3 and R4 require the applicable entity to restore Contingency Reserve within 60 minutes of the initiating event. By contrast, BAL-002-3 requires the applicable entity to achieve the same task in 105 minutes. As a result, BAL-002-WECC-3 requires the performance of the same task 45 minutes earlier than its continent-wide counterpart. This shortened period inhibits reliability in that it forces the applicable entities into transactions agreed upon during an arbitrarily shortened time window. Like BAL-002-3, Requirement R1., there is no technical support suggesting

that rushing this transaction enhances reliability —yet it remains in force 28 years after its inception, still lacking any technical support.

Further, the restoration of reserves in a 60-minute timeframe is restrictive on the entity's ability to secure additional resources within the established business practices in the region. The NERC Standard of up to 105 minutes (90 minutes after the 15 minutes Contingency Recovery Period) after the event has less commercial impact and is acceptable from both a commercial standpoint as well as an operational standpoint.

The WECC requirement of 60 minutes from start of a DCS event restricts the deficient entity from rescheduling resources to replace those that were lost during the event. Western market practices require schedules to be submitted and approved well in advance to ensure reliability, and once the schedule windows close, it is difficult to make last-minute changes. Before markets, when transactions were bilateral, a recovery of generation resources was more flexible, and could be more quickly executed.

The NERC BAL-002-3 Contingency Reserve Restoration Period of up to 105 minutes allows applicable entities to use normal market scheduling practices to replace lost generation. FERC's approval of NERC BAL-002-3 shows its belief that the NERC standard of 105 minutes (90 plus 15) is adequate and does not degrade reliability.

In attempting to meet the 60-minute restoration requirement, the applicable entity has two options.

First, the BA must carry significantly more Contingency Reserve than is required to maintain an adequate level of reliability, or second, be prepared to enter an Energy Emergency Alert 3 which allows the BA to deploy Contingency Reserves to serve load. By definition, entering into an Energy Emergency Alert is an indication of reduced reliability. Given normal scheduling practices, a 90-minute restoration time allows a Responsible Entity to restore Contingency Reserve using normal established market scheduling practices.

In addition, many entities own BES equipment in more than one interconnection. Having a single standard enhances these entities' ability to stay in compliance with the standard using consistent business practices across the interconnections.

Reserve Thresholds do Not Reflect Resource Mix

Due to the changing resource mix and the proliferation of renewable generation, battery storage, and retirements of conventional synchronous generation, resource adequacy has become a serious concern. The BAL-002-WECC standard unnecessarily ties up significant generation which is dispatchable, frequency responsive and fast ramping. Generation that could be used to meet ramps, follow variable resources, or simply meet expected loads, is committed to contingency reserve capacity that is not available to serve load. For example, Western Power Pool's Northwest Power Pool Reserve Sharing Group Northwest-Montana zone typically has a 1,200 MW MSSC, yet routinely has over 3,000 MW of



reserves being held under the 3/3 requirement. That available capacity, usually in excess 1,800 MW, could be used to meet other reliability related services obligations. The existing 3/3 contingency reserve requirement results in the construction of at least 1800 MW of excess generation in the Northwest-Montana zone. The ability to use this generation capacity exceeding the MSSC will also allow entities to efficiently operate their facilities. Idled excess capacity will be reduced and productive generation increased.

Under NERC standard NERC BAL-002-3, the Eastern, Texas and Quebec Interconnections operate without the additional reserve requirement (3% load and 3% generation), and they are allowed to restore their reserves within 90 minutes. The changing market structure in the Western Interconnection has made it difficult to fully restore the required reserves within 60 minutes due to market scheduling timelines. This can lead to implementation of emergency procedures, typically Energy Emergency Alert 3 conditions, due to an energy shortfall precipitated by the 60-minute recovery period. When the Western markets were mostly bilateral, the 60-minute recovery was consistent with energy scheduling protocols. Market integration has altered energy scheduling protocols making it very difficult to modify schedules within 60 minutes of a generation contingency. For these reasons BAL-002-WECC-3 has become obsolete, while not enhancing reliability.

Reserves are unused or unloaded generation that are in a state of readiness in case there is sudden loss of loaded generation. When reserves are held above the MSSC, as they are in the Western Interconnection, excess capacity must be built that has no other reliability benefit. Every energy customer in the West absorbs this excess cost. Retirement of BAL-002-WECC-3 reallocates these excess resources to the benefit of the interconnection in the form of dispatchable, responsive, and available resources to reliably integrate future variable resources, such as wind, solar, and other renewable resources.

Vital Public Interests will be Enhanced^{33 34}

Market Timing Issues

The emergence of organized markets in WECC, since the inception of BAL-002-WECC-1 has brought a new dynamic in the timing and means by which the reserves are procured. The number of participants in the California ISO Energy Imbalance Market (AKA: Western Energy Imbalance Market, or WEIM)

³³ “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.” FERC Order No. 672 at P 335.

³⁴ “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.” FERC Order No. 672 at P 328.



has grown significantly in the past several years. CAISO EIM market rules require a participating BA to balance its resources and loads 75 minutes before the next operating hour (T-75). Failure to do this can result in financial penalties to the participating BA. This rule has had the effect of discouraging any bilateral energy trading after T-75 and does not align well with a 60-minute reserve recovery time limit. No bilateral trading for replacement energy reserve is possible for the next operational hour because participating WEIM BAs cannot participate in trades within T-75.

This leaves the contingent BA in a resource short position when the 60-minute contingency restoration time expires. At this point, the contingent BA must activate emergency operating procedures up to asking the Reliability Coordinator to declare an EEA3, including load shedding to balance the contingent BA. By extending the contingency restoration time to 105 minutes (15-minute recovery plus 90-minute restoration), the contingent BA has at least 30 minutes to arrange replacement energy in a bilateral manner from other BAs or schedule their own resource in the WEIM. The additional contingency reserve recovery time allows the contingent BA to make orderly and planned adjustments and continue to serve firm load without the implementation of emergency operating procedures, up to and including shedding firm load.

FERC and the industry have determined that 90 minutes from the end of the recovery period (up to 15 minutes) is sufficient to maintain an adequate level of reliability. The shorter restoration period in the WECC creates artificial reliability issues as the applicable entity tries to rebalance supply and demand in an arbitrarily shorter period than that required in the NERC BAL-002-3.

To give a clear understanding of the impact of either option, the following example is provided.

Assume the NWPP RSG's MSSC is approximately 1,200 MW. Under BAL-002-WECC-3, the NWPP RSG would normally carry approximately 2,200-4,000 MW of Contingency Reserves depending on the time of year. Assuming the MSSC occurs, the NWPP RSG would activate 1,200 MW of its reserves and restore the ACE to the pre-event level. Members now have approximately 60 minutes to restore 1,200 MW of reserves while still carrying more than 1,000-2,800 MW, which is greater than the MSSC, assuming it was not reduced with the loss of the 1,180 MW event. See figure below.

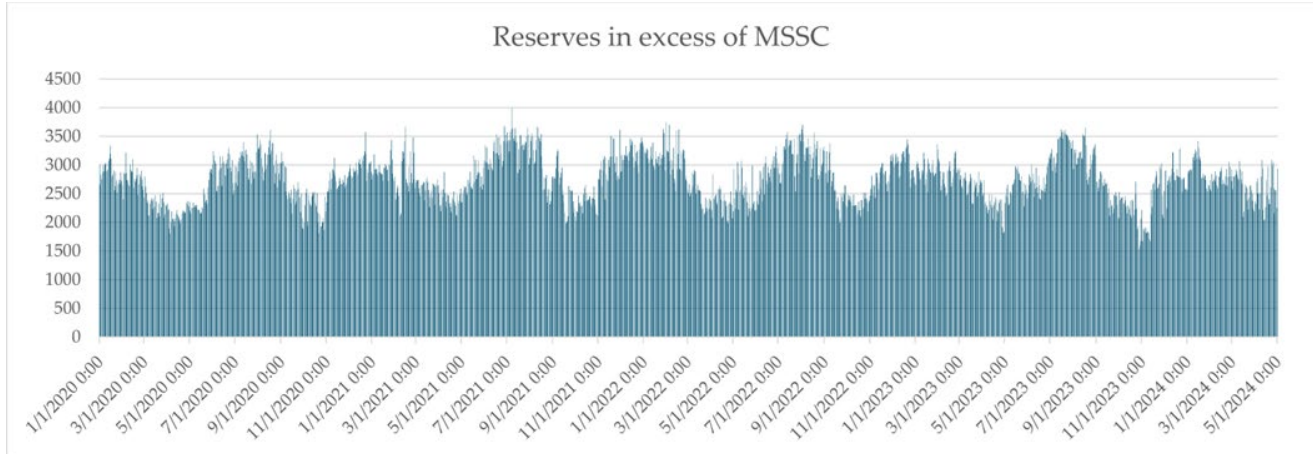


Figure 2: Reserves in excess of MSSC; January 1, 2020, through May 1, 2024

As discussed earlier, due to market rules related to the WEIM in which most entities are taking part, new resources cannot be added to an entity's reserves for the next hour (minimum time to add a resource under the WEIM (75 minutes), or other emerging markets. If a resource is not already in the WEIM, it cannot count toward the reserves needed. So, an entity must have already been carrying reserves greater than required under the WECC standard, or it must reduce load to balance its resources and loads including reserves. (It can be argued that by reducing loads, you are putting the interconnection at greater risk because you have removed one available resource, the load, from being an option for the next event.) To avoid the declaration of an EEA, the NWPP would need to carry an additional 1,000 MW above the required reserves or declare an EEA any time the reserves need to be restored within 60 minutes of the event.

When entities withhold extra reserves to avoid the EEA, this paradigm keeps 2,500 to 4,000 MW from serving load due to the WECC current standard, which has no technical merit, as compared to the NERC Standard. These additional resources could be used to help integrate more inverter-based resources and serve loads more efficiently if it were available for load service.

Entering an Energy Emergency Alert indicates reduced reliability. Given normal scheduling practices, which require bilateral schedules to be completed and approved 75 minutes before the hour, a 60-minute restoration time does not allow adequate time for a Responsible Entity to restore Contingency Reserve in less than 60 minutes from the initiating event, potentially resulting in an Energy Emergency Alert situation.

Capacity Could be Better Used than Simply Holding Reserve

FERC and the industry have determined that the amount of Contingency Reserve needed to maintain an adequate level of reliability is the amount of Contingency Reserve needed to replace the MSSC resource. Holding Contingency Reserve more than MSSC precludes using operating reserve for other purposes, particularly load and resource balancing in real-time. As the grid transitions from

conventional synchronous generation to more variable renewable resources, increasing capacity will be needed to manage the variability and faster ramping requirement of these resources. Allocating reserves in excess of that needed to maintain an adequate level of reliability, or MSSC, ultimately detracts from reliability.

Conclusion

Retirement of BAL-002-WECC-3 Contingency Reserve would reduce required reserves in WECC without diminishing the ability to meet the deployment requirement. Freeing up reserves from the Contingency Reserve requirement would increase the resources available to manage variable resources and accommodate increased renewable resource integration.

The existing BAL-002-WECC-3 Contingency Reserve sets a BA's or RSG's Contingency Reserve requirement to the greater of the MSSC or 3% of the applicable entity's generation and 3% of its load. This 3/3 requirement exceeds MSSC for most responsible entities.

By contrast, NERC Standard BAL-002-3 Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing Contingency Event, Requirement R1.3.2 states that the BA/RSG is not subject to compliance with Requirement R1 for multiple events that exceed the MSSC. NERC BAL-002-3 requires the applicable entity to deploy Contingency Reserve up to the MSSC but does not require Contingency Reserve deployment beyond the MSSC.

In BAL-002-3, FERC and the industry have determined that the amount of Contingency Reserve needed to maintain an adequate level of reliability is the amount of Contingency Reserve needed to replace the MSSC resource.

Holding Contingency Reserve more than MSSC precludes using operating reserve for other purposes, particularly load and resource balancing in real time. As the grid transitions from conventional synchronous generation to more variable renewable resources, increasing capacity will be needed to manage the variability and faster ramping requirement of these resources. Allocating reserve in excess of that needed to maintain an adequate level of reliability, or MSSC, ultimately detracts from reliability.

BAL-002-WECC-3 requires an applicable entity to restore Contingency Reserve within 60 minutes of the initiating event (as opposed to up to 105 minutes in BAL-002-3), or 45 minutes sooner than required by BAL-002-3. With respect to impacts to the time to restore Contingency Reserve, FERC and the industry have determined that 90 minutes from the end of the recovery period (up to 15 minutes) is sufficient to maintain an adequate level of reliability. By contrast, the 60-minute requirement within BAL-002-WECC-3 creates potential reliability issues as an applicable entity tries to rebalance in an arbitrarily shorter period than that required in the NERC BAL-002-3. In attempting to meet the 60-minute restoration requirement, an applicable entity has two options. First, the BA must carry significantly more Contingency Reserve than is required to maintain an adequate level of reliability, or second, be prepared to enter an Energy Emergency Alert 3 and deploy Contingency Reserve to serve load. Given normal scheduling practices, a 90-minute restoration time allows an applicable entity to restore Contingency Reserve without employing emergency procedures.

Retirement of BAL-002-WECC-3 will enhance the reliable operation of the Western Interconnection by allowing resources that are presently used for overprotecting above the MSSC to be available to meet



the immediate balancing needs of the Interconnection. This will free those resources to be used as needed in a rapidly changing system to maintain overall reliability.

Exhibit C

Summary of Development and Complete Record of Development

Attachment E – Project Roadmap

WECC-0142 BAL-002-WECC-3 Request to Retire

Project Roadmap

Actions		Completed
1.	Standard Authorization Request (SAR) Filed	August 14, 2020
2.	WECC Standards Committee (WSC) approved the SAR	October 22, 2020
3.	Drafting Team (DT) Solicitation	November 5, 2020
4.	WSC approves a Drafting Team	December 8, 2020
5.	DT Meeting	March 16, 2021
6.	DT Meeting (Subset)	March 31, 2021
7.	DT Meeting (Subset)	April 14, 2021
8.	DT Meeting	April 28, 2021
9.	DT Meeting	May 26, 2021
10.	DT Meeting	June 21, 2021
11.	DT Meeting	June 30, 2021
12.	DT Meeting	July 23, 2024
13.	DT Meeting	August 22, 2024
14.	DT Meeting	September 19, 2024
15.	DT Meeting	October 3, 2024
16.	DT Meeting	October 10, 2024
17.	DT Meeting	October 24, 2024

18.	DT Meeting	November 7, 2024
19.	Posting 1 Open	November 15, 2024
20.	Posting 1 Closed	January 15, 2025
21.	DT Meeting	January 21, 2025
22.	WSC Approved for Ballot	March 6, 2025
23.	Ballot Pool Open	April 14, 2025
24.	Ballot Pool Closed	April 28, 2025
25.	Standards Briefing Open Meeting	April 30, 2025
26.	Ballot Open	May 1, 2025
27.	Ballot Closed	May 15, 2025
28.	Passed Ballot Pool Approval	May 15, 2025
29.	WSC Approved for WECC Board of Directors (Board) Disposition	May 21, 2025
30.	WECC Board Approved for NERC/FERC Filing	June 11, 2025
31.	NERC 45-Day Comment – Open	TBD
32.	NERC 45-Day Comment – Closed	TBD
33.	DT Meeting	TBD
34.	NERC Board of Trustees Approved	TBD

**Standard Authorization Request
WECC-0142 BAL-002-WECC-2a
Contingency Reserve
Request to Retire**

Overview

This Standard Authorization Request (SAR) was: 1) received August 14, 2020, 2) deemed complete on August 27, 2020, 3) input into the WECC SAR software on October 20, 2020, for WECC Standards Committee (WSC) review on October 22, 2020.

This SAR can be reviewed in its originally submitted format on the WECC-0142 project page at the Standard Authorization Request accordion.

If you have questions regarding this SAR, please contact W. Shannon Black at sblack@wecc.org, (503) 307-5782.

Introduction

This project is a request to retire BAL-002-WECC-2 Contingency Reserve in its entirety.

Requester Information

Primary contact

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- Phone: (503) 445-1079
- Organization name: Northwest Power Pool Reserve Sharing Group

Alternate

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Type of Request

This is a request to retire BAL-002-WECC-2a Contingency Reserve in its entirety.

Create, Modify, Retire or Review a Document

Requested Action (Select one)

- This is a request to retire BAL-002-WECC-2a Contingency Reserve in its entirety.

Document Type (Select one)

- WECC Regional Standard

Issue

This SAR is assigned WECC Tracking Number WECC-0142. It was deemed valid and complete on August 27, 2020, and vetted by the WSC on October 22, 2020.

Retirement of BAL-002-WECC-2a Contingency Reserve would reduce required reserves in WECC without diminishing the ability to meet the deployment requirement. Freeing up reserves from the Contingency Reserve requirement would increase the resources available to manage variable resource and accommodate increased renewable resource integration.

The existing WECC-0115 BAL-002-WECC-2a Contingency Reserve sets a Balancing Authority's (BA) or Reserve Sharing Groups' (RSG) (Responsible Entity) Contingency Reserve requirement to the greater of the Most Severe Single Contingency (MSSC) or 3% of Responsible Entity generation.

By contrast, NERC Standard BAL-002-3 Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing Contingency Event, Requirement R1.3.2 states that the BA or RSG is not subject to compliance with Requirement R1 for multiple events that exceed the MSSC. NERC BAL-002-3 requires the Responsible Entity to deploy Contingency Reserve up to the MSSC but does not require Contingency Reserve deployment beyond the MSSC. BAL-002-WECC-2a requires a Responsible Entity to maintain Contingency Reserve that equals or exceeds the MSSC. In a larger BA or RSG, the summation of 3% of load plus 3% of generation exceeds the MSSC amount.

Requiring a Contingency Reserve capacity amount exceeding MSSC reduces the system capacity that is available to meet other reliability needs of that BA or RSG or to assist others in the Western Interconnection. As the interconnection resource mix transitions to a greater resource share provided by renewable variable energy resources, this freed-up capacity could be used to provide real-time load and resource balancing rather than being allocated to Contingency Reserve. At the same time, Contingency reserve would be made available in sufficient quantity to meet any MSSC event and

Standard Authorization Request
WECC-0142 BAL-002-WECC-2a
Contingency Reserve
Request to Retire

preserve reliability of the interconnection for the unplanned loss of a resource. The history behind the 3% load and 3% generation (see attachment Transition from 5-7 to 3-3), which was receded by the 5% hydro, 7% thermal (50% spin, 50% non-spin) was described in 2005 by Merrill Schultz, see attachment History of WECC reserve 5-7 Spin Merrill Schultz 03032005, moved to the 3% load and 3% generation to resolve inconsistency in the responsibility for reserves supporting interchange transactions and as a consensus recognition that the 5% hydro and 7% thermal could be relaxed on frequency response studies.

Proposed Remedy

Retirement of this Standard will allow a BA or RSG to allocate excess capacity to meet other reliability needs in the BA, RSG, or the Western Interconnection.

FERC and the industry have determined that the amount of Contingency Reserve needed to maintain an adequate level of reliability is the amount of Contingency Reserve needed to replace the MSSC resource. Holding Contingency Reserve in excess of MSSC precludes using operating reserve for other purposes, particularly load and resource balancing in real-time. As the grid transitions from conventional synchronous generation to more variable renewable resources, increasing capacity will be required to manage the variability and faster ramping requirement of these resources. Allocating reserve in excess of that needed to maintain an adequate level of reliability (MSSC) ultimately detracts from reliability .

BAL-002-WECC-2a requires a Responsible Entity to restore Contingency Reserve within 60 minutes of the initiating event (as opposed to up to 105 minutes in BAL-002), or 45 minutes sooner than required by BAL-002. With respect to impacts to the time to restore Contingency Reserve, FERC and the industry have determined tat 90 minutes from the end of the recovery period (up to 15 minutes) is sufficient to maintain an adequate level of reliability. This creates potential reliability issues as a Responsible Entity attempts to rebalance in an arbitrarily shorter period than that required in the NERC BAL-002. In attempting to meet the 60-minute restoration requirement, a Responsible Entity has two options. First, the BA must carry significantly more Contingency Reserve than is required to maintain an adequate level of reliability, or second, be prepared to enter an Emergency Alert 3 and reduce load to restore Contingency Reserve. Entering into an Energy Emergency Alert indicates reduced reliability. Given normal scheduling practices, a 90-minute restoration time allows a Responsible Entity to restore Contingency Reserve in less than 60 minutes from the initiating event, resulting in an Energy Emergency Alert situation.

In addition, many entities own BES equipment in more than one interconnection. Having a single Standard helps these entities remain in compliance with the Standard.



Applicable Entities

- Balancing Authority
- Reserve Sharing Group

Detailed Description

Retire BAL-002-WECC-2a Contingency Reserve. The current Standard has four major differences from BAL-002-3 Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing Contingency Event.

- 1) Contingency Reserve Requirement
 - a. BAL-002-3 requires the Responsible Entity to have Contingency Reserve equal to, or greater than, the Responsible Entity's MSSC.
 - b. BAL-002-WECC-2a requires the Responsible Entity to have Contingency Reserve equal to, or greater than, the greater of: i) the Responsible Entity's MSSC or, ii) the sum of 3% of the hourly integrated load plus 3% of hourly integrated generation.
- 2) Spinning Reserve Requirement
 - a. BAL-002-3 does not have a Spinning Reserve requirement.
 - b. BAL-002-WECC-2a currently has a Spinning Reserve requirement of one half of total Contingency Reserve obligation (currently under review by FERC for removal).
- 3) Reserve Restoration
 - a. BAL-002-3 requires reserve to be restored at the end of the Contingency Reserve Restoration Period (a period not exceeding 90 minutes following the end of the Contingency Event Recovery Period). The Contingency Event Recovery Period extends 15 minutes from the beginning of a Reportable Balancing Contingency Event.
 - b. BAL-002-WECC-2a requires restoration of Contingency Reserve within 60 minutes following the event.
- 4) Operating Reserve Requirement modifications due to transactions
 - a. BAL-002-3 does not have requirements to modify Operating Reserve due to reserve transactions with other entities.
 - b. BAL-002-WECC-2a requires Operating Reserve be held, in addition to minimum Contingency Reserve requirements, for interchange Transactions that are designated as part of the entity's Operating Reserve—Supplemental.

Discussion

- 1) The MSSC is the reliability standard for all interconnections but the Western Interconnection. This ensures that all entities can recover ACE for their MSSC within 15 minutes. Holding a value greater than that (such as 3% generation and 3% load), which does not have any rigorous



study around it, does not enhance reliability of the interconnection. In fact, it decreases reliability of the interconnection by allocating resources as Contingency Reserve that could be used for other operational needs to maintain reliability. By requiring Contingency Reserve beyond MSSC and in excess of what is necessary to maintain an adequate level of reliability, additional resources are needed to maintain reliability for other needs, such as variability of resources and fast ramping.

- 2) The spinning reserve requirement (R2) will no longer be part of the standard by the time this SAR is addressed.
- 3) With respect to the time to restore Contingency Reserve, FERC and the industry have determined that 90 minutes from the end of the recovery period (up to 15 minutes) is sufficient to maintain an adequate level of reliability. BAL-002-WECC-2a requires a Responsible Entity to restore Contingency Reserve within 60 minutes of the initiating event (as opposed to up to 105 minutes in BAL-002), or 45 minutes sooner. This creates potential reliability issues as a Responsible Entity attempts to rebalance in an arbitrarily shorter period than that required in the NERC BAL-002. In attempting to meet the 60-minute restoration requirement, a Responsible Entity has two options. First, the BA must carry significantly more Contingency Reserve than is required to maintain an adequate level of reliability, or second, be prepared to enter an Energy Emergency Alert 3 and reduce load to restore contingency reserve. By definition, entering an Energy Emergency Alert indicates reduced reliability. Given normal scheduling practices, a 90-minute restoration time allows a Responsibility Entity to restore Contingency Reserve using normal practices rather than attempting to restore Contingency Reserve in less than 60 minutes from the initiating event, resulting in an Energy Emergency Alert situation.
- 4) Standards should not dictate how commercial arrangements are conducted.

Affected Reliability Principles

Reliability Principle 2—The frequency and voltage of interconnected bulk electric systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.

Document Information

NA

Reference Uploads

- Final NWPP RSG SAR for retirement of BAL-002-WECC-2a.docx 410.78 kb
- History of WECC Reserve 5-7 Spin Merrill Schultz 03032005.docx 15.94 kb



**Standard Authorization Request
WECC-0142 BAL-002-WECC-2a
Contingency Reserve
Request to Retire**

- Transition from 5-7 to 3-3.docx 13.23 kb
- WECC Standard BAL-002-WECC-2a—Contingency Reserve.pdf 320.49 kb

Provide additional comments (if needed).

Costs are unnecessarily increased in the interconnection by misallocating resources as Contingency Reserve that could be used for other operational needs to maintain reliability. By requiring Contingency Reserve beyond MSSC and in excess of what is necessary to maintain an adequate level of reliability, additional resources are needed to maintain reliability for other needs, such as variability and fast ramping. Retirement of BAL-002-WECC-2a will allow a BA to allocate capacity resources to most efficiently meet the needs of the BA, reducing overall costs.

The NWPP RSG leadership discussed the SAR with the WECC Performance Work Group and Operating Committee and there was no negative feedback received.

The 24 Balancing Authorities of the NWPP RSG are in full support of this SAR.



Black, Shannon

From: Black, Shannon
Sent: Tuesday, 20 October, 2020 4:52 PM
Subject: WSC to Consider Multiple Standard Authorization Requests (SAR)
Attachments: WECC-0142 Request to Retire BAL-002-WECC-2a - Attachment A - Standard Authorization Request.pdf; WECC-0143 COM-001-WECC-2.1 SAR Five-year Review.pdf; WECC-0144 INT-020-WECC-CRT-2.1 SAR Five Year.pdf; WECC-0145 INT-021-WECC-CRT-2.2 SAR Five Year.pdf



WSC to Consider Multiple Standard Authorization Requests (SAR)

During the October 22, 2020 meeting of the WECC Standards Committee (WSC), the WSC will consider four projects for development. The proposed SARs are attached,

- WECC-0142 BAL-002-WECC-2a Contingency Reserve – consider for full retirement
- WECC-0143 COM-001-WECC-2.1 Digital Circuit Synchronization – five year review
- WECC-0144 INT-020-WECC-CRT-2.1 Digital Interchange Schedule – five year review
- WECC-0145 INT-021-WECC-CRT-2.2 WECC Interchange Tool – five year review

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Black, Shannon

From: Black, Shannon
Sent: Thursday, 5 November, 2020 12:15 PM
Subject: WECC-0142, Request to Retire BAL-002-WECC-2a Contingency Reserve - Drafting Team Solicitation



Drafting Team Solicitation

Drafting Team nominations are being solicited for the following project:

- [WECC-0142](#), BAL-002-WECC-2a, Contingency Reserve, Request to Retire

This is a request to retire the Standard in its entirety.

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-0142.”

Nominations will be addressed at the next scheduled WECC Standards Committee (WSC) meeting, currently targeted for December 2020.

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Black, Shannon

From: Black, Shannon
Sent: Wednesday, 28 April, 2021 11:01 AM
Subject: WECC-0115 BAL-002-WECC-3, Contingency Reserve - FERC Approved



WECC-0115 BAL-002-WECC-3, Contingency Reserve – FERC Approved

On April 15, 2021, FERC approved WECC-0115 BAL-002-WECC-3, Contingency Reserve, retiring Requirement R2 of BAL-002-WECC-2a. (Docket No. [RM19-20-000](#)) To ensure reliability is maintained in the absence of R2, an information filing will be required 30 months following implementation.

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Black, Shannon

From: Black, Shannon
Sent: Wednesday, 30 March, 2022 1:06 PM
Subject: WECC-0142 BAL-002-WECC-3 Notice of Project in Abeyance



WECC-0142 BAL-002-WECC-3 Contingency Reserve - Request to Retire

The WECC-0142 project is in abeyance until further notice. In the interim, the drafting team will meet off-line to draft a white paper in support of retiring the entire Standard. Once the team has a work product for review, the team will reconvene for public review to include standardized comment/response.

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WECC-0142 BAL-002-WECC-3

Contingency Reserve

Request to Retire

Posting for Comment 1

WECC-0142 Drafting Team

11/15/2024

Executive Summary

This document supports and requests full retirement of WECC Regional Reliability Standard (RRS) BAL-002-WECC-3, Contingency Reserve.

In FERC Order No. 672, when considering approval of RRSs, FERC agreed to accept two kinds of regional differences: (1) a regional difference that is more stringent than the continent-wide Reliability Standard, including a regional difference that addresses matters that the continent-wide Reliability Standard does not; and (2) an RRS that is necessitated by a physical difference in the Bulk-Power System.¹

Order 672 also provides authority to retire an RRS.

Since the start of BAL-002-WECC-3 and its predecessors (2007), the original standard and each later iteration have continued as more stringent than the continent-wide equivalent, NERC BAL-002-X, Disturbance Control Standard. Among other things, WECC's BAL-002-WECC series has always required holding more reserves than the continent-wide equivalent. Specifically, BAL-002-WECC-3, Requirement R1.1.1 requires the applicable entity to hold reserves based on three percent of load and three percent of generation.

Though Requirement R1.1.1 was approved in BAL-002-WECC-1, that approval was predicated on distributing burden and the availability of deliverability.² There has never been a technical study proving that holding reserves more than that required under NERC BAL-002-X enhances the reliability of the Western Interconnection.

By contrast, as variable generation is added to the Interconnection, there is increasing evidence that holding excess reserves may be inhibiting reliability across the Interconnection. FERC's recent Order 901 echoes these concerns, addressing operational and performance concerns for variable resources.

Restated, within the Western Interconnection, applicable entities are holding more reserves than the rest of the continent, even though there is no technical basis for doing so. In FERC Order 693, in which NERC BAL-002-1 was first approved, at P341, FERC states:

341. We believe a continent-wide contingency reserves policy would assure [sic] that there are adequate magnitude and frequency responsive contingency reserves in each Balancing Authority. This will improve performance so that no Balancing Authority will be doing *less than its fair share*." (Emphasis added.)

¹ Order No. 672 at P 331. See also FERC Order 740, P 4 and P 23.

[https://www.nerc.com/pa/Stand/Resources/Documents/FERC'S Criteria for Approving Reliability Standards from Order 672.pdf](https://www.nerc.com/pa/Stand/Resources/Documents/FERC'S%20Criteria%20for%20Approving%20Reliability%20Standards%20from%20Order%20672.pdf)

² FERC Order 740, Remand.



By extension, retiring BAL-002-WECC-3 in favor of NERC BAL-002-3, ensures that no Balancing Authority will be doing **more** than its fair share.

Further, holding that excess may be inhibiting the use of variable generation by unnecessarily sequestering generation. As a result, BAL-002-WECC-3 creates a mandated scenario in which reserves are used inefficiently, artificially withheld from the marketplace, and potentially driving up the cost of power unreasonably.

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Introduction

Per the Standard Authorization Request (SAR) for WECC-0142,³ this document explores the full retirement of WECC RRS BAL-002-WECC-3, Contingency Reserve.

The following will show that, if the standard is retired, reliability will continue to be maintained through NERC BAL-002-3, and may be enhanced as otherwise sequestered resources may more efficiently backstop variable generation.

By retiring BAL-002-WECC-3 in favor of NERC BAL-002-3:

- Dispatchable resources can be used to support variable generation, addressing issues raised by FERC in Order 901.
- A more efficient use of resources should negate any current negative impacts on the market, thereby enhancing vital public interests.

As the Procedural and Historic Development sections note, BAL-002-WECC-3 is an evolution of pre-standards originating in the 1990s. Never during the estimated 30 years of its existence has there been a technical justification for the values and procedures required in the standard. Rather, the stated values and procedures are the result of generalized negotiations taking place between the parties. Because these values and procedures are negotiated, the content of BAL-002-WECC-3 is the lowest common denominator and does not meet the requirements of FERC Order 672.⁴

Because BAL-002-WECC-2a, Contingency Reserve, Request to Retire Requirement R2 provided the technical support for retiring Requirement R2, arguments in that filing are not revisited here.⁵

³ See WECC-0142 BAL-002-WECC-3, Contingency Reserve, Request to Retire, home page, at the SAR accordion.

⁴ FERC Order 672, P329 and P330.

⁵ Approved by the NERC Board of Trustees on August 15, 2019, filed with FERC on September 9, 2019.



Standard of Review

While the Commission may approve an RRS that is more stringent than a parallel continent-wide standard, the Commission may also retire such a standard.⁶

“While a Regional Entity may propose regional Reliability Standards that address specific, unique regional conditions and circumstances, *such regional Reliability Standards can be retired if those justifications are no longer relevant*. Accordingly, the Commission may approve retirement of a more stringent regional requirement “if the Regional Entity demonstrates that the continent-wide Reliability Standard is sufficient to ensure the reliability of that region.”⁷ (Emphasis added.)

In doing so, the Commission must give due weight to the technical expertise of a Regional Entity, like WECC, that is organized on an interconnection-wide basis with respect to the regional differences applicable to the Western Interconnection.

The technical qualifications of the subject matter experts compiling this paper are provided with this filing, as presented and approved by the WECC Standards Committee (WSC).

⁶ 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. 16 U.S.C. § 824o(d)(2) and 18 C.F.R. § 39.5(a). (See also) Additionally, 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 is,
- (2) necessitated by a physical difference in the Bulk-Power System.

⁷ Version One Regional Reliability Standard for Resource and Demand Balancing, Order No. 740, 75 FR 65964 (Oct. 27, 2010), 133 FERC ¶ 61,063, P 30 (2010). See also: FERC, 18 CFR Part 40, Docket No. RM19-20-000, WECC Regional Reliability Standard BAL-002-WECC-3 (Contingency Reserve), p.5



Procedural History

In 1996, the Western Systems Coordinating Council (WSCC)⁸ adopted the WSCC Reliability Criteria, Minimum Operating Reliability Criteria (MORC). The MORC prescribed levels of reserves that became BAL-002-WECC-3, effective 2021.

In 1999, the MORC became the WECC Reliability Management System (RMS), a contract-based system of accountability that pre-dated mandatory standards.

As the industry approached the onset of mandatory standards (2007) and memorialization of legacy operating practices, the content of the RMS was adapted and approved as BAL-STD-002-0, Operating Reserves (2007). That standard was an attempt to translate the substantive content of the RMS into the sought-after NERC/FERC format of today's reliability standards. The *content* was accepted "as is" with its origins in the 1996 MORC; albeit, the early standard was remanded for remediation, largely on *format* and structural grounds.

In 2013, FERC accepted remediations to BAL-002-WECC-2.

In 2017, an interpretation was added (BAL-002-WECC-2a), and later incorporated into BAL-002-WECC-3, in which Requirement R2 was approved for retirement, with an effective date of August 15, 2019.

In 2024, the Western Interconnection still adheres to the 1996 levels for reserves. This means that, for 28 years, the Western Interconnection has held more reserves than the rest of the continent (NERC BAL-002-3) even though there has never been technical justification to do so.

⁸ The Western Systems Coordinating Council (WSCC) was formed in 1967 by 40 power systems to coordinate the planning and operations of the electric system in western North America. The WSCC's goal was to provide reliable power to the public.



Development History (Before 1996 to 2024)

Before 1996, members of the WSCC voluntarily operated the Western Interconnection according to the MORC.⁹ Although the MORC contained provisions for generation control, generation performance, and Contingency Reserve, the MORC provided no technical support for the reserve thresholds and characteristics it set.¹⁰ Rather, the operating thresholds were established by negotiation—not technical analysis. If this approach were adopted today, FERC would likely deny approval of the standard as contrary to FERC Order 672, P329.¹¹

In July and August of 1996, the Western Interconnection experienced two widespread outages resulting from improper vegetation management. The resultant outage reports^{12 13} made several recommendations that would later be adopted in the 1999 WECC RMS.^{14 15} The WECC Operating Committee's recommendation produced portions of the RMS that later evolved into WECC Standard BAL-STD-002-0, Operating Reserves, ultimately becoming BAL-002-WECC-3. Like the other initial

⁹ MORC, Maintenance Coordination: 1. Sharing information. The security and reliability of the interconnected power system depends upon periodic inspection and adequate maintenance of generators, transmission lines and associated equipment, control equipment, communication equipment, relaying equipment, and other system facilities. Entities and coordinated groups of entities must establish procedures and responsibility for disseminating information on scheduled outages and for coordinating scheduled outages of major facilities which affect the security and reliability of the interconnected power system.

¹⁰ Minimum Operating Reliability Criterion, Section 1, Generation Control and Performance

¹¹ FERC Order 672, P329. 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.

¹² The outage reports are available upon request. Western Systems Coordinating Council (WSCC) Disturbance Report for the Power System Outage that Occurred on the Western Interconnection August 10, 1996, as approved by the WSCC Operations Committee on October 18, 1996

¹³ “f. The WSCC Operations Committee shall assess whether the levels and allocation of operating reserves contributed to the severity of this disturbance and implement corrective measures as appropriate.” Western System Coordinating Council Disturbance Report, For the Power System Outages that Occurred on the Western Interconnection on 2 JUL 1996. Approved by the WSCC Operations Committee on September 19, 1996. RMS Outage Report, page 14.

¹⁴ The RMS was approved 1 SEP 1999. WECC Comment Report – WECC Tier 1- RMS Standard – (BAL-STD-002-0) Question 4, Attachment 2, page 9.

¹⁵ “The majority of these standards were specifically developed to address and mitigate main causes of the two major system outages that occurred in the Western Interconnection in July and August of 1996.” Agenda Item 3, Board of Trustees Meeting, March 12, 2007, page 4

standards, the language of the original standard was a translation of the language contained in the RMS.¹⁶

In March 1997, noting that federal remedial legislation could take years to enact, the WSCC trustees created the WSCC RMS Policy Group¹⁷ establishing a contract-based operational system known as the RMS.^{18 19} In establishing the RMS, the WSCC RMS Policy Group reviewed all NERC and WECC reliability criteria, identified specific criteria deemed critical for reliability management, then moved those criteria into the RMS through a three-phase implementation plan.²⁰

On April 14, 1999, FERC asserted jurisdiction over the RMS.

Between September 1998 and February 2000 (phase two of the three-phase RMS implementation), the WSCC turned the content of the RMS into the first mandatory reliability standards (aka Version Zero, 2007). BAL-SDT-002-0, Contingency Reserve was part of that translation.

On December 22, 2006, WECC submitted a request to NERC to approve, and send to FERC for approval, eight proposed RRSs. WECC referred to the eight proposed standards as its Tier One

¹⁶ WECC states that the proposed regional Reliability Standards, which are exact translations of existing regional criteria, either address matters not addressed in the Commission-approved ERO Reliability Standards or contain more stringent requirements than the ERO standards. (FERC accepted Tier One standards evolving from the RMS. AKA: Tier One Order.) FERC, 119 FERC ¶ 61,260 United States of America, Federal Energy Regulatory Commission, Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications (Issued June 8, 2007), page 19.

¹⁷ Following the enactment of EPAct 2005 and the establishment of mandatory Reliability Standards applicable to all owners, operators, and users of the BPS, WECC sought to translate certain of its existing practices under its RMS reliability criteria into regional Reliability Standards to supplement the continent-wide Reliability Standards the Commission approved in Order No. 693. To that end, WECC established a task force to identify criteria in the RMS that should be binding on all BPS users, owners, and operators in the Western Interconnection, not just the Transmission Operators subject to the RMS. The task force chose eight of the identified criteria, which had the highest priority and could be implemented in the near term for translation into regional Reliability Standards. United States of America Before the Federal Energy Regulatory Commission, North American Electric Reliability Corporation (NERC), Docket No. RM16-10-000, Supplemental Information for Petition of the NERC and WECC for Approval of retirement of Regional reliability Standard TOP-007-WECC-1a, page 5.

¹⁸ Hearing

¹⁹ Electric Reliability Corporation, Helping Owners, Operators, and Users of the Bulk Power System Assure Reliability and Security for More Than 50 Years, By David Nevius, Senior Vice President 1979–2012, Page 40–41.

²⁰ Hearing



standards originating from the RMS because the proposed standards were translations of standards that were already mandatory within the Western Interconnection as part of the RMS.²¹

Those eight standards—that included Tier One WECC-BAL-STD-002-0 (Operating Reserves) - were near-exact translations of existing WECC criteria that FERC earlier accepted as part of the WECC RMS program.²² Because the content was a near-exact translation, the format did not match that required by NERC/FERC. This would later lead to a remand of BAL-002-WECC-1 to ensure conformity.

On January 9, 2007, NERC provided WECC with a report of its preliminary findings about the request from December 22, 2006, and provided WECC with a list of required remediations.²³ The request largely addressed styles, formats, and corrections to compliance sections. The NERC Board of Trustees approved the Tier One request subject to remediation and sent the eight proposed standards to FERC with a request for approval.

In June 2007, FERC approved WECC's submittal of eight reliability-crucial Tier One standards thereby transitioning from the RMS system to that of FERC-approved NERC Reliability Standards.²⁴ Although earlier versions lacked technical support, FERC agreed with

"WECC, WIRAB [Western Interconnection Regional Advisory Board] and NERC that approval of [WECC's early BAL] under section 215 would enhance reliability in the Western Interconnection **by making WECC's current practices binding** on all relevant entities in the region and **by strengthening WECC's compliance and enforcement authority.**"²⁵

²¹ North American Electric Reliability Corporation, Docket No. RR07-___-000, III. BACKGROUND ON THE DEVELOPMENT OF THE WECC REGIONAL RELIABILITY STANDARDS, Debra A. Palmer of Schiff/Hardin (1666 K STREET N.W., SUITE 300, WASHINGTON, DC 20006) on March 26, 2007.

²² Loc. Cit. IV. Overview of the Proposed WECC Regional Reliability Standards, page 6.

²³ NERC DECISION APPROVING, WITH CONDITIONS, RELIABILITY STANDARDS PROPOSED BY WESTERN ELECTRICITY COORDINATING COUNCIL, page 2. (Approved by Board of Trustees March 12, 2007)

²⁴FERC Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications, Docket No. RR07-11-000, (Issued June 8, 2007)

²⁵ Tier One Order, p. 43. See also, "The proposed regional Reliability Standards would make eight of those RMS criteria binding on the applicable subset of users, owners and operators of the Bulk-Power System in the United States portion of the Western Interconnection, as identified in each proposed standard. The regional Reliability Standards would supplement rather than replace the Commission-approved Reliability Standards developed by the ERO that will take effect in June 2007. Tier One, p. 10.



Structural Overview of BAL-002-WECC-3

Purpose

The Purpose of currently effective RRS BAL-002-WECC-3—Contingency Reserve is to provide an RRS specifying “the quantity and types of Contingency Reserve required to ensure reliability under normal and abnormal conditions.”²⁶

The NERC Glossary defines Contingency Reserve as:

“The provision of capacity that may be deployed by the Balancing Authority to respond to a Balancing Contingency Event and other contingency requirements (such as Energy Emergency Alerts as specified in the associated EOP standard). A Balancing Authority may include in its restoration of Contingency Reserve readiness to reduce Firm Demand and include it if, and only if, the Balancing Authority:

- is experiencing a Reliability Coordinator declared Energy Emergency Alert level, and is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan.
- is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan.”

Applicability

BAL-002-WECC-3 applies to Balancing Authorities (BA), unless the BA is a member of a Reserve Sharing Group (RSG), in which case the RSG becomes the applicable entity.

Requirements

The standard consists of four requirements.

Requirement R1

- Provides that each BA and RSG must maintain a minimum amount of Contingency Reserve, except within the first sixty minutes following an event requiring the activation of Contingency Reserves, and that the Contingency Reserve must consist of any combination of a list of specified reserve types.

Requirement R2

- Reserved. Retired, subject to cyclical field tests.

²⁶ BAL-002-WECC-3, Contingency Reserve, Purpose.



Requirement R3

- Each Sink BA and RSG must maintain an amount of Operating Reserve, in addition to the minimum Contingency Reserve in Requirement R1, equal to the amount of Operating Reserve–Supplemental for any Interchange Transaction designated as part of the Source Balancing Authority’s Operating Reserve–Supplemental or source Reserve Sharing Group’s Operating Reserve–Supplemental, except within the first sixty minutes following an event requiring the activation of Contingency Reserve.

Requirement R4

- Each Source BA and RSG must maintain an amount of Operating Reserve, in addition to the minimum Contingency Reserve amounts identified in Requirement R1, equal to the amount and type of Operating Reserves for any Operating Reserve transactions for which it is the Source BA or RSG.

Reliability will be Maintained

Upon retirement of BAL-002-WECC-3, reliability will be maintained by NERC BAL-002-3, Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing Contingency Event, reinforced by the enhanced availability of resources currently unavailable under BAL-002-WECC-3.

Replacing BAL-002-WECC-3 with NERC BAL-002-3 Mitigates Reliability Gaps associated with Variable Generation

As highlighted by FERC in its Order 901, with the growing amount of variable generation replacing more responsive and dispatchable resources, the industry faces the dilemma of how to support these new resources.²⁷ Unlike traditional resources, much of the new variable generation cannot be quickly dispatched, thus creating a gap in reliability. FERC acknowledged that gap, noting that neither business-as usual nor existing reliability standards will remedy this concern. Finally, FERC also recognizes the value that steps taken must apply on a continent-wide basis.²⁸

Replacing BAL-002-WECC-3 with the continent-wide NERC BAL-002-3 takes immediate steps towards meeting FERC's concerns.

In Order 901, FERC states:

“[W]e continue to find that as the resource mix trends towards higher penetrations of IBRs, the need to reliably integrate these resources into the Bulk-Power System is expected to grow, and that the currently effective Reliability Standards do not adequately address IBR reliability risks. *The continuing risks that the increasing penetration of IBRs pose to the reliable operation of the Bulk-Power System underscore the need for mandatory Reliability Standards to address these issues on a nationwide basis.*” (Emphasis added.) Order 901, P24.

When BAL-002-WECC-3 is retired and replaced with NERC BAL-002-3, the amount and type of reserves required to be held back within the Western Interconnection will decrease. That frees those resources to be plied against load. Within the Western Interconnection, a vast majority of these sequestered resources are immediately dispatchable (such as hydro), thus serving as the perfect resource to match the less predictable response of variable generation.

²⁷ FERC Order 901, P11-15, 185 FERC ¶ 61,042, United States of America, Federal Energy Regulatory Commission (FERC), 18 CFR Part 40, Docket No. RM22-12-000; Reliability Standards to Address Inverter-Based Resources, October 19, 2023. Hereafter: Order 901

²⁸ Order 901, P24.



By making these dispatchable resources more operationally available, the secondary benefits may be to bolster the supply of generation to the market with the unintended favorable consequence of driving down the cost of power. This potential secondary benefit directly addresses vital public interests.²⁹

Dispatchable Resources Contribute Significantly to Essential Reliability Services (ERS) ³⁰

ERSs consist of frequency control, ramping capability, and voltage control.

Frequency control is necessary because the electric grid is designed to operate at a frequency of 60 hertz (Hz). Deviations from 60 Hz can have destructive effects on generators, motors, and equipment of all sizes and types. It is critical to maintain and restore frequency after a disturbance such as the loss of generation. This requires an instantaneous (inertial) response from some resources and a fast response from other resources to slow the rate of fall during the arresting period, a fast increase in power output during the rebound period to stabilize the frequency, and a more prolonged contribution of additional power to compensate for lost resources and bring system frequency back to the normal level. Two NERC Reliability Standards address this:

- BAL-002-3 Disturbance Control Standard—Contingency Reserve from a Balancing Contingency Event
- BAL-003-2 Frequency Response and Frequency Bias Setting

Adequate ramping capability (the ability to match load and generation at all times) is necessary to maintain system frequency. Changes to the generation mix or the system operator's ability to adjust resource output can impact the ability of the operator to keep the system in balance. NERC Reliability Standard BAL-001-2 (Real Power Balancing Control Performance) addresses this issue.

Voltage must be controlled to protect system reliability and move power where it is needed in both normal operations and following a disturbance. Voltage issues tend to be local in nature, such as in sub-areas of the transmission and distribution systems. Reactive power is needed to keep electricity flowing and maintain necessary voltage levels. Several NERC Reliability Standards address voltage control.

Restated, replacing BAL-002-WECC-3 with NERC BAL-002-3 frees dispatchable resources to address FERC-identified reliability gaps created by variable generation, and may bolster vital public interests

²⁹ "335. 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." (Emphasis added.) Order 693, P35.

³⁰ "Essential Reliability Services (ERS) are the elemental 'reliability building blocks' from resources (generation and demand) necessary to maintain Bulk Power System (BPS) reliability." NERC ERS Task Force – Scope – 2014.

by driving down the cost of power. Because adequate levels of reserves are established in NERC BAL-002-3, and supported by BAL-003-2, BAL-002-WECC-3, Requirements R1 through R4 are not needed.

Replacing BAL-002-WECC-3 With NERC BAL-002-3 Provides Sufficient Reserves at a Continent-Wide Level

In the earliest stages of the Western Interconnection's strides to establish adequate Contingency Reserves, the applicable entity's reserves were established by BAL-STD-002-0, Operating Reserves, at 5% of hydro generation and 7% thermal generation (50% spinning and 50% non-spinning).³¹ These thresholds were not technically supported; they were the result of contractual negotiations. Today, such a standard would likely not be approved by FERC as violative of the principles established in FERC Order 672. (See foot note 2.)

As BAL-STD-0-2 was replaced with later iterations of that standard, the result was today's BAL-002-WECC-3, in which the Responsible Entity's reserves are set at:

R1.1.1 "The greater of either:

- The amount of Contingency Reserve equal to the loss of the most severe single contingency;³² (or)
- The amount of Contingency Reserve equal to the sum of three percent of hourly integrated Load plus three percent of hourly integrated generation."

Bullet one of BAL-002-WECC-3 describes the Most Severe Single Contingency, or MSSC.

The MSSC ensures that all entities can recover Area Control Error within 15 minutes. The MSSC serves as the upper Contingency Reserve threshold for all interconnections, except the Western Interconnection. Within the Western Interconnection, the levels of reserve set by BAL-002-WECC-3 can exceed that of the rest of the continent that is protected by FERC-approved BAL-002-3. As a result, the Western Interconnection carries an excess of reserve that exacerbates concerns raised by FERC in Order 901 wherein FERC addresses the need for continent-wide standards to backstop the operational performance of variable generation. Comparing NERC BAL-002-3 with BAL-002-WECC-3 illustrates this outcome.

NERC BAL-002-3 states that the BA and the RSG are not subject to compliance with BAL-002-3, R1 for multiple events that exceed the MSSC. NERC BAL-002-3 requires the applicable entity to deploy Contingency Reserve *up to its MSSC*; however, it does not require Contingency Reserve deployment *beyond MSSC*.

³¹ See Attachment - Transition from 5-7 to 3-3, as described in 2005 by Merrill Schultz; see also Attachment - History of WECC Reserve 5-7 Spin Merrill Schultz, March 3, 2005; see also BAL-STD-002-0, Operating Reserves.

³² Also known as the Most Severe Single Contingency (MSSC).



By contrast, BAL-002-WECC-3 requires the applicable entity to maintain a level of Contingency Reserves *exceeding that required under NERC BAL-002-3*, as approved by FERC. Specifically, BAL-002-WECC-3, Requirement R1 requires the applicable entity to carry reserves that equal or exceed the entity's MSSC—beyond that required by BAL-002-3 that adequately serves the balance of the continent. Among other things, this means these valuable dispatchable resources in excess of the MSSC cannot be used to meet FERC's goal of backstopping variable resources as identified in FERC Order 901.

While application of BAL-002-3 could free resources to enhance reliability, application of BAL-002-WECC-3 can inhibit reliability when resources are withheld that could otherwise serve load and backstop variable resources.

For example:

Using historical data from January 2020 - May 2024, comparison of the hourly Contingency Reserve Requirement (calculated using 3% generation and 3% load) to the Most Severe Single Contingency (MSSC), the results identified there was more than 5,000 MW of capacity available during the summertime peak hours and between 2,000-2,500 MW during the remaining hours of the year. See figure below.

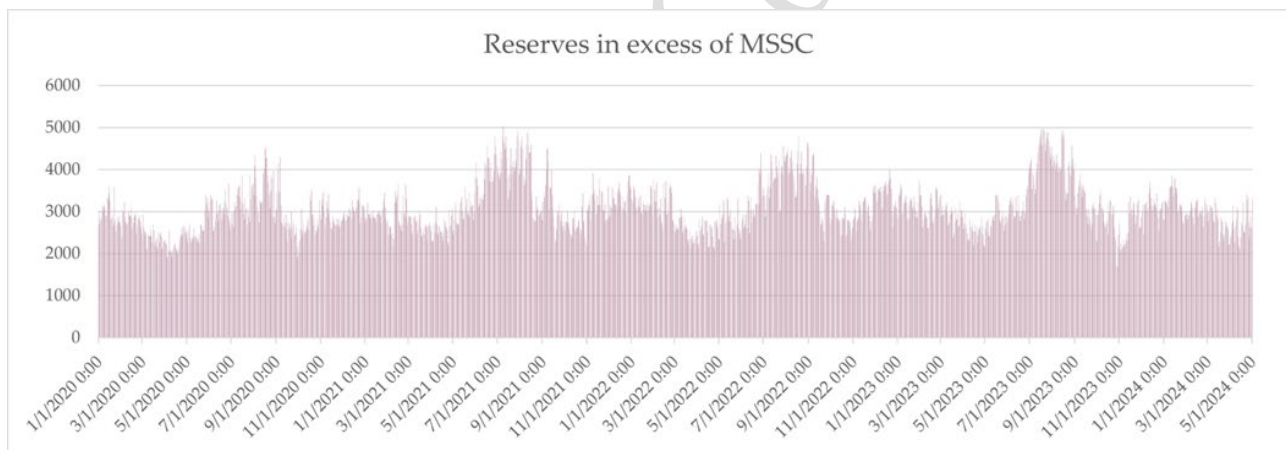


Figure 1: Reserves in excess of MSSC

The Shortened Execution Time of BAL-003-WECC-3 Inhibits Reliability Due to Market Rules in the Western Interconnection

BAL-002-WECC-3, Requirements R3 and R4 require the applicable entity to restore Contingency Reserve within 60 minutes of the initiating event. By contrast, BAL-002-3 requires the applicable entity to achieve the same task in 105 minutes. As a result, BAL-002-WECC-3 requires the performance of the same task 45 minutes earlier than its continent-wide counterpart. This shortened period inhibits reliability in that it forces the applicable entities into transactions agreed upon during an arbitrarily shortened time window. Like BAL-002-3, Requirement R1., there is no technical support suggesting

that rushing this transaction enhances reliability —yet it remains in force 28 years after its inception, still lacking any technical support.

Further, the restoration of reserves in a 60-minute timeframe is restrictive on the entity's ability to secure additional resources within the established business practices in the region. The NERC Standard of up to 105 minutes (90 minutes after the 15 minutes Contingency Recovery Period) after the event has less commercial impact and is acceptable from both a commercial standpoint as well as an operational standpoint.

The WECC requirement of 60 minutes from start of a DCS event restricts the deficient entity from rescheduling resources to replace those that were lost during the event. Western market practices require schedules to be submitted and approved well in advance to ensure reliability, and once the schedule windows close, it is difficult to make last minute changes. Before markets, when transactions were bilateral, a recovery of generation resources was more flexible, and could be more quickly executed.

The NERC BAL-002-3 Contingency Reserve Restoration Period of up to 105 minutes allows applicable entities to use normal market scheduling practices to replace lost generation. FERC's approval of NERC BAL-002-3 shows its belief that the NERC standard of 105 minutes (90 plus 15) is adequate and does not degrade reliability.

In attempting to meet the 60-minute restoration requirement, the applicable entity has two options.

First, the BA must carry significantly more Contingency Reserve than is required to maintain an adequate level of reliability, or second, be prepared to enter an Energy Emergency Alert 3 which allows the BA to deploy Contingency Reserve, and to serve load. By definition, entering into an Energy Emergency Alert is an indication of reduced reliability. Given normal scheduling practices, a 90-minute restoration time allows a Responsible Entity to restore Contingency Reserve using normal established market scheduling practices.

In addition, many entities own BES equipment in more than one interconnection. Having a single standard enhances these entities' ability to stay in compliance with the standard using consistent business practices across the interconnections.

Reserve Thresholds do Not Reflect Resource Mix

Due to the changing resource mix and the proliferation of renewable generation, battery storage, and retirements of conventional synchronous generation, resource adequacy has become a serious concern. The BAL-002-WECC standard unnecessarily ties up significant generation which is dispatchable, frequency responsive and fast ramping. Generation that could be used to meet ramps, follow variable resources, or simply meet expected loads, is committed to contingency reserve capacity that is not available to serve load. For example, Western Power Pool's Northwest Power Pool Reserve Sharing Group Northwest-Montana zone typically has a 1,200 MW MSSC, yet routinely has over 3000 MWs of

reserves being held under the 3/3 requirement. That available capacity, usually in excess 1800 MW, could be used to meet other reliability related services obligations. The existing 3/3 contingency reserve requirement results in the construction of at least 1800 MW of excess generation in the Northwest-Montana zone. The ability to use this generation capacity exceeding the MSSC will also allow entities to efficiently operate their facilities. Idled excess capacity will be reduced and productive generation increased.

Under NERC standard NERC BAL-002-3, the Eastern, Texas and Quebec Interconnections operate without the additional reserve requirement (3% load and 3% generation), and they are allowed to restore their reserves within 90 minutes. The changing market structure in the Western Interconnection has made it difficult to fully restore the required reserves within 60 minutes due to market scheduling timelines. This can lead to implementation of emergency procedures, typically Energy Emergency Alert 3 conditions, due to an energy shortfall precipitated by the 60-minute recovery period. When the Western markets were mostly bilateral, the 60-minute recovery was consistent with energy scheduling protocols. Market integration has altered energy scheduling protocols making it very difficult to modify schedules within 60 minutes of a generation contingency. For these reasons BAL-002-WECC-3 has become obsolete and onerous to western ratepayers, while not enhancing reliability.

Reserves are unused or unloaded generation that are in a state of readiness in case there is sudden loss of loaded generation. When reserves are held above the MSSC, as they are in the Western Interconnection, excess capacity must be built that has no other reliability benefit. Every energy customer absorbs this excess cost. Retirement of BAL-003-WECC-3 reallocates these excess resources to the benefit of the interconnection in the form of dispatchable, responsive, and available resources to reliably integrate future variable resources, such as wind, solar, and other renewable resources.

Vital Public Interests will be Enhanced^{33 34}

Market Timing Issues

The emergence of organized markets in WECC, since the inception of BAL-002-WECC-1 has brought a new dynamic in the timing and means by which the reserves are procured. The number of participants in the California ISO Energy Imbalance Market (AKA: Western Energy Imbalance Market, or WEIM) has grown significantly in the past several years. CAISO EIM market rules require a participating BA to

³³ “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.” FERC Order No. 672 at P 335.

³⁴ “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.” FERC Order No. 672 at P 328.

balance its resources and loads 75 minutes before the next operating hour (T-75). Failure to do this can result in financial penalties to the participating BA. This rule has had the effect of discouraging any bilateral energy trading after T-75 and does not align well with a 60-minute reserve recovery time limit. No bilateral trading for replacement energy reserve is possible for the next operational hour because participating WEIM BAs cannot participate in trades within T-75.

This leaves the contingent BA in a resource short position when the 60-minute contingency restoration time expires. At this point, the contingent BA must activate emergency operating procedures up to asking the Reliability Coordinator to declare an EEA3, including load shedding to balance the contingent BA. By extending the contingency restoration time to 105 minutes (15-minute recovery plus 90-minute restoration), the contingent BA has at least 30 minutes to arrange replacement energy in a bilateral manner from other BAs or schedule their own resource in the WEIM. The additional contingency reserve recovery time allows the contingent BA to make orderly and planned adjustments and continue to serve firm load without the implementation of emergency operating procedures, up to and including shedding firm load.

FERC and the industry have determined that 90 minutes from the end of the recovery period (up to 15 minutes) is sufficient to maintain an adequate level of reliability. The shorter restoration period in the WECC creates artificial reliability issues as the applicable entity tries to rebalance supply and demand in an arbitrarily shorter period than that required in the NERC BAL-002-3.

To give a clear understanding of the impact of either option, the following example is provided.

Assume the NWPP RSG's MSSC is approximately 1,200 MW. Under BAL-002-WECC-3, the NWPP RSG would normally carry approximately 2,200-4,000 MW of Contingency Reserves depending on the time of year. Assuming the MSSC occurs, the NWPP RSG would activate 1,200 MW of its reserves and restore the Area Control Error (ACE) to the pre-event level. Members now have approximately 60 minutes to restore 1,200 MW of reserves while still carrying more than 1,000-2,800 MW, which is greater than the MSSC, assuming it was not reduced with the loss of the 1,180 MW event. See figure below.

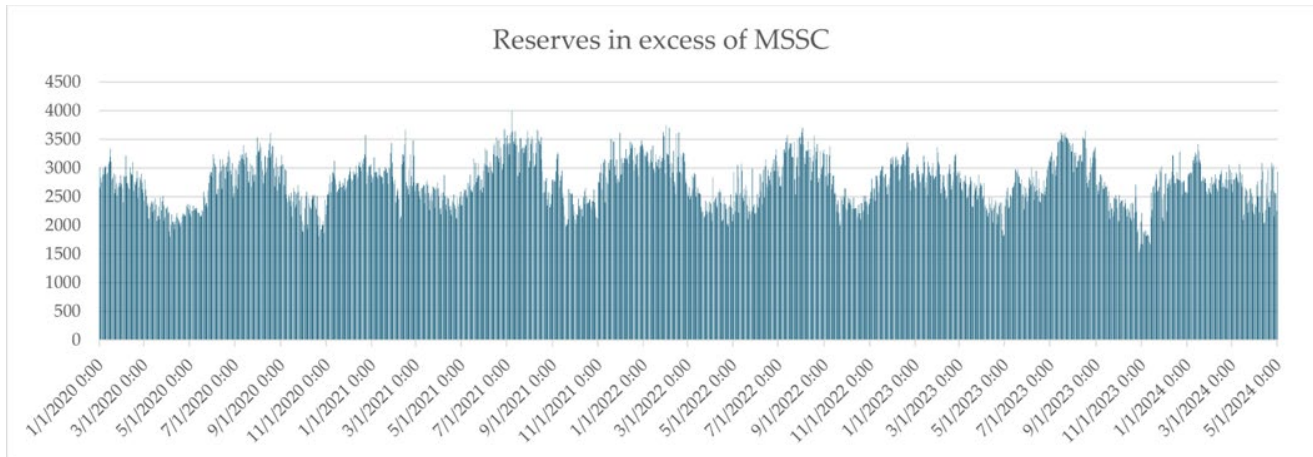


Figure 2: Reserves in excess of MSSC; January 1, 2020 through May 1, 2024

As discussed earlier, due to market rules related to the WEIM in which most entities are taking part, new resources cannot be added to an entity's reserves for the next hour (minimum time to add a resource under the WEIM (75 minutes), or other emerging markets. If a resource is not already in the WEIM, it cannot count toward the reserves needed. So, an entity must have already been carrying reserves greater than required under the WECC standard, or it must reduce load to balance its resources and loads including reserves. (It can be argued that by reducing loads, you are putting the interconnection at greater risk because you have removed one available resource, the load, from being an option for the next event.) To avoid the declaration of an EEA, the NWPP would need to carry an additional 1,000 MWs above the required reserves or declare an EEA any time the reserves need restored within 60 minutes of the event.

When entities withhold extra reserves to avoid the EEA, this paradigm keeps 2,500 to 4,000 MWs from serving load due to the WECC current standard, which has no technical merit, as compared to the NERC Standard. These additional resources could be used to help integrate more inverter-based resources or serve loads more economically if it were available for load service rather than being held out for the third or fourth contingency.

Entering an Energy Emergency Alert indicates reduced reliability. Given normal scheduling practices, which require bilateral schedules to be completed and approved 75 minutes before the hour, a 60-minute restoration time does not allow adequate time for a Responsible Entity to restore Contingency Reserve in less than 60 minutes from the initiating event, potentially resulting in an Energy Emergency Alert situation.

Capacity Could be Better Used than Simply Holding Reserve

FERC and the industry have determined that the amount of Contingency Reserve needed to maintain an adequate level of reliability is the amount of Contingency Reserve needed to replace the MSSC resource. Holding Contingency Reserve more than MSSC precludes using operating reserve for other

purposes, particularly load and resource balancing in real-time. As the grid transitions from conventional synchronous generation to more variable renewable resources, increasing capacity will be needed to manage the variability and faster ramping requirement of these resources. Allocating reserves in excess of that needed to maintain an adequate level of reliability, or MSSC, ultimately detracts from reliability.

Conclusion

Retirement of BAL-002-WECC-3 Contingency Reserve would reduce required reserves in WECC without diminishing the ability to meet the deployment requirement. Freeing up reserves from the Contingency Reserve requirement would increase the resources available to manage variable resources and accommodate increased renewable resource integration.

The existing BAL-002-WECC-3 Contingency Reserve sets a BA's or RSG's Contingency Reserve requirement to the greater of the MSSC or 3% of the applicable entity's generation and 3% of its load. This 3/3 requirement exceeds MSSC for most responsible entities.

By contrast, NERC Standard BAL-002-3 Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing Contingency Event, Requirement R1.3.2 states that the BA/RSG is not subject to compliance with Requirement R1 for multiple events that exceed the MSSC. NERC BAL-002-3 requires the applicable entity to deploy Contingency Reserve up to the MSSC but does not require Contingency Reserve deployment beyond the MSSC.

In BAL-002-3, FERC and the industry have determined that the amount of Contingency Reserve needed to maintain an adequate level of reliability is the amount of Contingency Reserve needed to replace the MSSC resource.

Holding Contingency Reserve more than MSSC precludes using operating reserve for other purposes, particularly load and resource balancing in real-time. As the grid transitions from conventional synchronous generation to more variable renewable resources, increasing capacity will be needed to manage the variability and faster ramping requirement of these resources. Allocating reserve in excess of that needed to maintain an adequate level of reliability, or MSSC, ultimately detracts from reliability.

BAL-002-WECC-3 requires an applicable entity to restore Contingency Reserve within 60 minutes of the initiating event (as opposed to up to 105 minutes in BAL-002-3), or 45 minutes sooner than required by BAL-002-3. With respect to impacts to the time to restore Contingency Reserve, FERC and the industry have determined that 90 minutes from the end of the recovery period (up to 15 minutes) is sufficient to maintain an adequate level of reliability. By contrast, the 60-minute requirement within BAL-002-WECC-3 creates potential reliability issues as an applicable entity tries to rebalance in an arbitrarily shorter period than that required in the NERC BAL-002-3. In attempting to meet the 60-minute restoration requirement, an applicable entity has two options. First, the BA must carry significantly more Contingency Reserve than is required to maintain an adequate level of reliability, or second, be prepared to enter an Emergency Alert 3 and deploy Contingency Reserve to serve load. Given normal scheduling practices, a 90-minute restoration time allows an applicable entity to restore Contingency Reserve without employing emergency procedures.

Retirement of BAL-002-WECC-3 will enhance the reliable operation of the Western Interconnection by allowing resources that are presently used for overprotecting above the MSSC to be available to meet

the immediate balancing needs of the Interconnection. This will free those resources to be used as needed in a rapidly changing system to maintain overall reliability.

Do you agree with the Drafting Team's request for the Standard to be retired? Yes/No with a narrative explanation

Name	Organization	Comment
Kevin Conway	Western Power Pool	Yes, the Western Power Pool supports the retirement of BAL-002-WECC-3
Rebecca Zahler	PUD No. 1 of Chelan County	Yes, CHPD concurs with the Drafting Team's request to retire the BAL-002-WECC Standard. We support the rationale outlined in the WECC-0142 Attachment A SAR and the WECC-0142 BAL-002-WECC-3 White Paper.
Adrian Andreoiu	BC Hydro	Yes
Lindsay Wickizer	PacifiCorp	Yes
Holly Mitchell	Northwestern Energy	Yes. The retirement of this standard is long overdue. This retirement will enable WECC to be in line with the continent-wide NERC BAL-002-3 as the industry rapidly evolves to integrate IBRs and other alternative energy sources. The retirement will also enhance reliable operations by removing unnecessarily restrictive practices.
Jennie Wike`	Tacoma Power	Yes
Michael Jang	Seattle City Light	Yes, SCL is in agreement and full support with the Drafting Team's request for the Standard to be retired. The retirement of the WECC specific Reliability Standard does not diminish or lessen the ability, intent and actions that are taken during events the standard was initially created to address.
ChaRee DiFabio	Western Power Pool	Yes. In review of the NWPP RSG Data, the group holds excess contingency reserve, at least two to three times the MSSC, that its Participants could utilize to maintain other operational needs, such as supporting the variable resources and frequency response. In addition, as already noted, it has economic impacts to these participants since there are associated costs for holding back the Contingency Reserve that could be used elsewhere to maintain reliability. Last, the timing requirement from 60 minutes to 90 minutes does allow a more practical restoration period to recover from the event and restore contingency reserve, which should decrease the numbers and level of a potential EEA3 since the entity will have time to assess more rational
Anna Lavik	Puget Sound Energy	Yes, PSE agrees that retirement would improve reliability and free up available generation.
Marie Anderson	GCPUD	Yes
Alan Wahlstrom	Southwest Power Pool	Yes, the western interconnect is held at a higher standard than the other Interconnects, It is unfair and places an additional burden on operating resources as compared to the other Interconnects.
Dwanique Spiller	NV Energy	1. Yes, NV Energy agrees with the Drafting Team's request and that it provides operational efficiency, maintains reliability, simplifies compliance, facilitates better integration of IBRs, and provides economic
Steven Ashbaker	Western Electricity Coordinating Council	Yes, I agree with the Drafting Teams request for the Standard to be retired. Retirement of this standard would free up excess reserves being held above the MSSC requirements to serve system demand, without reducing reliability in the WI. This additional available capacity would be better used to address the issues associated with IBR integration and variable generation.

Tim Kelley	SMUD, BANC	Yes. SMUD and BANC agree with the Drafting Team that holding Contingency Reserves at a level of 3% load plus 3% generation is not technically supported and is more than what is needed for bulk power system reliability. We recognize that BAL-002-WECC-3 may provide additional reliability for the large system events, such as double Palo Verde unit tripping or Northwest RAS generation tripping, which has occurred in the past. The Drafting Team should consider adding some analysis in the white paper showing that the reliability risks associated with these big system events could still be adequately addressed with the retirement of BAL-002-WECC-3. In addition, BAL-002-WECC-3 Requirement R3 requires each sink BA and each sink RSG to carry additional Contingency Reserves for non-firm purchases of Contingency Reserves, and BAL-002-WECC-3 Requirement R4 requires each source BA and each sink RSG to carry additional Contingency Reserves for firm sales of Contingency Reserves. We recommend that the Drafting Team add some rationale in the white paper for the retirement of these two requirements.
Cain Braveheart	Bonneville Power Administration	Yes. Bonneville Power Administration (BPA) believes the current standard requires WECC entities to hold more contingency reserves than is necessary and allows only 60 minutes to fully recover from an event. With the number of variable generation resources coming online, the capacity being unused by holding too much for contingency reserve can be better allocated to ensure reliability of the interconnection and to help balance the variable energy resources. BPA believes the timing required by the markets causes issues when trying to replenish reserves in the 60 minutes allocated. The 105 minutes allotted in BAL-002-3 (90 minutes after the Contingency Event Recovery Period) is better suited for operations in a market environment.
Diana Torres	Imperial Irrigation District	Yes, As IID is a participant in the NWPP Reserve Sharing Group, those Contingency Reserves must always be met and held for use. As part of the RSG our reliability will not be compromised. Communication between the RSG and the BA have remained strong and will correspond and respect the BAL-002-3 NERC standard that will take the place of BAL-002-WECC-3 standard.
Mike Pfeister	SRP	Yes, SRP does agree with the Drafting Team's request for BAL-002-WECC-3 to be retired. NERC BAL-002-3 has a proven history of meeting the needs of each interconnection. The requirements in BAL-002-WECC-3 have not been found to be necessary in their history in the Western Interconnection. With more variable resources in the interconnection it makes sense to maximize the use of freed up capacity, with the retirement of BAL-002-WECC-3, to be used for regulation and capacity needs.

[illegible]



WECC-0142 BAL-002-WECC-3

Contingency Reserve

Request to Retire

WECC-0142 Drafting Team

01/21/2025

WECC-0142 BAL-002-WECC-3—Contingency Reserve—Request to Retire**Executive Summary**

This document supports and requests full retirement of WECC Regional Reliability Standard (RRS) BAL-002-WECC-3, Contingency Reserve.

In FERC Order No. 672, when considering approval of RRSs, FERC agreed to accept two kinds of regional differences: (1) a regional difference that is more stringent than the continent-wide Reliability Standard, including a regional difference that addresses matters that the continent-wide Reliability Standard does not; and (2) an RRS that is necessitated by a physical difference in the Bulk-Power System.¹

Order 672 also provides authority to retire an RRS.

Since the start of BAL-002-WECC-3 and its predecessors (2007), the original standard and each subsequent iteration have continued as more stringent than the continent-wide equivalent, NERC BAL-002-X, Disturbance Control Standard. Among other things, WECC's BAL-002-WECC has always required most WECC entities to hold more reserves than the continent-wide equivalent. Specifically, BAL-002-WECC-3, Requirement R1.1.1 requires the applicable entity to hold the greater of, either the amount of Contingency Reserve equal to the loss of the most severe single contingency or the amount of Contingency Reserve equal to the sum of 3% of hourly integrated load and 3% of hourly integrated generation.

Though Requirement R1.1.1 was approved in BAL-002-WECC-1, that approval was predicated on distributing burden and the availability of deliverability.² There has never been a technical study proving that holding reserves more than that required under NERC BAL-002-X enhances the reliability of the Western Interconnection.

By contrast, as variable generation is added to the Interconnection, there is increasing evidence that holding excess reserves may be inhibiting reliability across the interconnection. FERC's recent Order 901 echoes these concerns, addressing operational and performance concerns for variable resources.

Restated, within the Western Interconnection, applicable entities are holding more reserves than the rest of the continent, even though there is no technical basis for doing so. In FERC Order 693, in which NERC BAL-002-1 was first approved, at P341, FERC states:

341. We believe a continent-wide contingency reserves policy would assure [sic] that there are adequate magnitude and frequency responsive contingency reserves in each Balancing

¹ Order No. 672 at P 331. See also FERC Order 740, P 4 and P 23.

[https://www.nerc.com/pa/Stand/Resources/Documents/FERC'S Criteria for Approving Reliability Standards from Order 672.pdf](https://www.nerc.com/pa/Stand/Resources/Documents/FERC'S%20Criteria%20for%20Approving%20Reliability%20Standards%20from%20Order%20672.pdf)

² FERC Order 740, Remand.



WECC-0142 BAL-002-WECC-3—Contingency Reserve—Request to Retire

Authority. This will improve performance so that no Balancing Authority will be doing *less than its fair share.*" (Emphasis added.)

By extension, retiring BAL-002-WECC-3 in favor of NERC BAL-002-3, ensures that no Balancing Authority will be doing **more** than its fair share.

Further, requiring Balancing Authorities to hold that excess may be inhibiting the integration and use of variable generation. As a result, BAL-002-WECC-3 creates a mandated scenario in which reserves are used inefficiently and withheld from the marketplace.

WECC-0142 BAL-002-WECC-3—Contingency Reserve—Request to Retire

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WECC-0142 BAL-002-WECC-3—Contingency Reserve—Request to Retire

Introduction

Per the Standard Authorization Request (SAR) for WECC-0142,³ this document explores the full retirement of WECC RRS BAL-002-WECC-3, Contingency Reserve.

The following will show that, if the standard is retired, reliability will continue to be maintained through NERC BAL-002-3, and may be enhanced as resources being held for contingency reserves may be used more efficiently to support variable generation.

By retiring BAL-002-WECC-3 in favor of NERC BAL-002-3:

- Dispatchable resources can be used to support variable generation, addressing issues raised by FERC in Order 901.
- A more efficient use of resources should negate any current negative impacts on the market, thereby enhancing vital public interests.

As the Procedural History and Development History sections note, BAL-002-WECC-3 is an evolution of pre-standards originating in the 1990s. Never during the estimated 30 years of its existence has there been a technical justification for the values and procedures required in the standard. Rather, the stated values and procedures are the result of generalized negotiations taking place between the parties. Because these values and procedures are negotiated, the content of BAL-002-WECC-3 is the lowest common denominator and does not meet the requirements of FERC Order 672.⁴

Because BAL-002-WECC-2a, Contingency Reserve, Request to Retire Requirement R2 provided the technical support for retiring Requirement R2, arguments in that filing are not revisited here.⁵

³ See WECC-0142 BAL-002-WECC-3, Contingency Reserve, Request to Retire, home page, at the SAR accordion.

⁴ FERC Order 672, P329 and P330.

⁵ Approved by the NERC Board of Trustees on August 15, 2019, filed with FERC on September 9, 2019.



Standard of Review

While the Commission may approve an RRS that is more stringent than a parallel continent-wide standard, the Commission may also retire such a standard.⁶

“While a Regional Entity may propose regional Reliability Standards that address specific, unique regional conditions and circumstances, *such regional Reliability Standards can be retired if those justifications are no longer relevant*. Accordingly, the Commission may approve retirement of a more stringent regional requirement “if the Regional Entity demonstrates that the continent-wide Reliability Standard is sufficient to ensure the reliability of that region.”⁷ (Emphasis added.)

In doing so, the Commission must give due weight to the technical expertise of a Regional Entity, like WECC, that is organized on an interconnection-wide basis with respect to the regional differences applicable to the Western Interconnection.

The technical qualifications of the subject matter experts compiling this paper are provided with this filing, as presented and approved by the WECC Standards Committee (WSC).

⁶ 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. 16 U.S.C. § 824o(d)(2) and 18 C.F.R. § 39.5(a). (See also) Additionally, 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 is,
- (2) necessitated by a physical difference in the Bulk-Power System.

⁷ Version One Regional Reliability Standard for Resource and Demand Balancing, Order No. 740, 75 FR 65964 (Oct. 27, 2010), 133 FERC ¶ 61,063, P 30 (2010). See also: FERC, 18 CFR Part 40, Docket No. RM19-20-000, WECC Regional Reliability Standard BAL-002-WECC-3 (Contingency Reserve), p.5



WECC-0142 BAL-002-WECC-3—Contingency Reserve—Request to Retire**Procedural History**

In 1996, the Western Systems Coordinating Council (WSCC)⁸ adopted the WSCC Reliability Criteria, Minimum Operating Reliability Criteria (MORC). The MORC prescribed levels of reserves that became BAL-002-WECC-3, effective 2021.

In 1999, the MORC became the WECC Reliability Management System (RMS), a contract-based system of accountability that pre-dated mandatory standards.

As the industry approached the onset of mandatory standards (2007) and memorialization of legacy operating practices, the content of the RMS was adapted and approved as BAL-STD-002-0, Operating Reserves (2007). That standard was an attempt to translate the substantive content of the RMS into the sought-after NERC/FERC format of today's reliability standards. The *content* was accepted "as is" with its origins in the 1996 MORC; albeit, the early standard was remanded for remediation, largely on *format* and structural grounds.

In 2013, FERC accepted remediations to BAL-002-WECC-2.

In 2017, an interpretation was added (BAL-002-WECC-2a), and later incorporated into BAL-002-WECC-3, in which Requirement R2 was approved for retirement, with an effective date of August 15, 2019.

In 2025, the Western Interconnection still adheres to similar levels of reserves as it did in 1996. This means that, for over 28 years, the Western Interconnection has held more reserves than the rest of the continent (NERC BAL-002-3) even though there has never been technical justification to do so.

⁸ The Western Systems Coordinating Council (WSCC) was formed in 1967 by 40 power systems to coordinate the planning and operations of the electric system in western North America. The WSCC's goal was to provide reliable power to the public.



WECC-0142 BAL-002-WECC-3—Contingency Reserve—Request to Retire**Development History (Before 1996 to 2024)**

Before 1996, members of the WSCC voluntarily operated the Western Interconnection according to the MORC.⁹ Although the MORC contained provisions for generation control, generation performance, and Contingency Reserve, the MORC provided no technical support for the reserve thresholds and characteristics it set.¹⁰ Rather, the operating thresholds were established by negotiation—not technical analysis. If this approach were adopted today, FERC would likely deny approval of the standard as contrary to FERC Order 672, P329.¹¹

In July and August of 1996, the Western Interconnection experienced two widespread outages resulting from improper vegetation management. The resulting outage reports^{12 13} made several recommendations that would later be adopted in the 1999 WECC RMS.^{14 15} The WECC Operating Committee's recommendation produced portions of the RMS that later evolved into WECC Standard BAL-STD-002-0, Operating Reserves and, ultimately, BAL-002-WECC-3. Like the other initial

⁹ MORC, Maintenance Coordination: 1. Sharing information. The security and reliability of the interconnected power system depends upon periodic inspection and adequate maintenance of generators, transmission lines and associated equipment, control equipment, communication equipment, relaying equipment, and other system facilities. Entities and coordinated groups of entities must establish procedures and responsibility for disseminating information on scheduled outages and for coordinating scheduled outages of major facilities which affect the security and reliability of the interconnected power system.

¹⁰ Minimum Operating Reliability Criterion, Section 1, Generation Control and Performance

¹¹ FERC Order 672, P329. 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.

¹² The outage reports are available upon request. Western Systems Coordinating Council (WSCC) Disturbance Report for the Power System Outage that Occurred on the Western Interconnection August 10, 1996, as approved by the WSCC Operations Committee on October 18, 1996

¹³ “f. The WSCC Operations Committee shall assess whether the levels and allocation of operating reserves contributed to the severity of this disturbance and implement corrective measures as appropriate.” Western System Coordinating Council Disturbance Report, For the Power System Outages that Occurred on the Western Interconnection on 2 JUL 1996. Approved by the WSCC Operations Committee on September 19, 1996. RMS Outage Report, page 14.

¹⁴ The RMS was approved 1 SEP 1999. WECC Comment Report – WECC Tier 1- RMS Standard – (BAL-STD-002-0) Question 4, Attachment 2, page 9.

¹⁵ “The majority of these standards were specifically developed to address and mitigate main causes of the two major system outages that occurred in the Western Interconnection in July and August of 1996.” Agenda Item 3, Board of Trustees Meeting, March 12, 2007, page 4



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standards, the language of the original standard was a translation of the language contained in the RMS.¹⁶

In March 1997, noting that federal remedial legislation could take years to enact, the WSCC trustees created the WSCC RMS Policy Group¹⁷ establishing a contract-based operational system known as the RMS.^{18 19} In establishing the RMS, the WSCC RMS Policy Group reviewed all NERC and WECC reliability criteria, identified specific criteria deemed critical for reliability management, then moved those criteria into the RMS through a three-phase implementation plan.²⁰

On April 14, 1999, FERC asserted jurisdiction over the RMS.

Between September 1998 and February 2000 (phase two of the three-phase RMS implementation), the WSCC turned the content of the RMS into the first mandatory reliability standards (aka Version Zero, 2007). BAL-SDT-002-0, Contingency Reserve was part of that translation.

On December 22, 2006, WECC submitted a request to NERC to approve, and send to FERC for approval, eight proposed RRSs. WECC referred to the eight proposed standards as its Tier One

¹⁶ WECC states that the proposed regional Reliability Standards, which are exact translations of existing regional criteria, either address matters not addressed in the Commission-approved ERO Reliability Standards or contain more stringent requirements than the ERO standards. (FERC accepted Tier One standards evolving from the RMS. AKA: Tier One Order.) FERC, 119 FERC ¶ 61,260 United States of America, Federal Energy Regulatory Commission, Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications (Issued June 8, 2007), page 19.

¹⁷ Following the enactment of EPAct 2005 and the establishment of mandatory Reliability Standards applicable to all owners, operators, and users of the BPS, WECC sought to translate certain of its existing practices under its RMS reliability criteria into regional Reliability Standards to supplement the continent-wide Reliability Standards the Commission approved in Order No. 693. To that end, WECC established a task force to identify criteria in the RMS that should be binding on all BPS users, owners, and operators in the Western Interconnection, not just the Transmission Operators subject to the RMS. The task force chose eight of the identified criteria, which had the highest priority and could be implemented in the near term for translation into regional Reliability Standards. United States of America Before the Federal Energy Regulatory Commission, North American Electric Reliability Corporation (NERC), Docket No. RM16-10-000, Supplemental Information for Petition of the NERC and WECC for Approval of retirement of Regional Reliability Standard TOP-007-WECC-1a, page 5.

¹⁸ Hearing

¹⁹ Electric Reliability Corporation, Helping Owners, Operators, and Users of the Bulk Power System Assure Reliability and Security for More Than 50 Years, By David Nevius, Senior Vice President 1979–2012, Page 40-41.

²⁰ Hearing



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standards originating from the RMS because the proposed standards were translations of standards that were already mandatory within the Western Interconnection as part of the RMS.²¹

Those eight standards—that included Tier One WECC-BAL-STD-002-0 (Operating Reserves)—were near-exact translations of existing WECC criteria that FERC earlier accepted as part of the WECC RMS program.²² Because the content was a near-exact translation, the format did not match that required by NERC/FERC. This would later lead to a remand of BAL-002-WECC-1 to ensure conformity.

On January 9, 2007, NERC provided WECC with a report of its preliminary findings about the request from December 22, 2006, and provided WECC with a list of required remediations.²³ The request largely addressed styles, formats, and corrections to compliance sections. The NERC Board of Trustees approved the Tier One request subject to remediation and sent the eight proposed standards to FERC with a request for approval.

In June 2007, FERC approved WECC's submittal of eight reliability-crucial Tier One standards, thereby transitioning from the RMS system to that of FERC-approved NERC Reliability Standards.²⁴ Although earlier versions lacked technical support, FERC agreed with

“WECC, WIRAB [Western Interconnection Regional Advisory Board] and NERC that approval of [WECC's early BAL] under section 215 would enhance reliability in the Western Interconnection **by making WECC's current practices binding** on all relevant entities in the region and **by strengthening WECC's compliance and enforcement authority.**”²⁵

²¹ North American Electric Reliability Corporation, Docket No. RR07-___-000, III. BACKGROUND ON THE DEVELOPMENT OF THE WECC REGIONAL RELIABILITY STANDARDS, Debra A. Palmer of Schiff/Hardin (1666 K STREET N.W., SUITE 300, WASHINGTON, DC 20006) on March 26, 2007.

²² Loc. Cit. IV. Overview of the Proposed WECC Regional Reliability Standards, page 6.

²³ NERC DECISION APPROVING, WITH CONDITIONS, RELIABILITY STANDARDS PROPOSED BY WESTERN ELECTRICITY COORDINATING COUNCIL, page 2. (Approved by Board of Trustees March 12, 2007)

²⁴FERC Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications, Docket No. RR07-11-000, (Issued June 8, 2007)

²⁵ Tier One Order, p. 43. See also, “The proposed regional Reliability Standards would make eight of those RMS criteria binding on the applicable subset of users, owners and operators of the Bulk-Power System in the United States portion of the Western Interconnection, as identified in each proposed standard. The regional Reliability Standards would supplement rather than replace the Commission-approved Reliability Standards developed by the ERO that will take effect in June 2007. Tier One, p. 10.



Structural Overview of BAL-002-WECC-3

Purpose

The Purpose of currently effective RRS BAL-002-WECC-3—Contingency Reserve is to provide an RRS specifying “the quantity and types of Contingency Reserve required to ensure reliability under normal and abnormal conditions.”²⁶

The NERC Glossary defines Contingency Reserve as:

“The provision of capacity that may be deployed by the Balancing Authority to respond to a Balancing Contingency Event and other contingency requirements (such as Energy Emergency Alerts as specified in the associated EOP standard). A Balancing Authority may include in its restoration of Contingency Reserve readiness to reduce Firm Demand and include it if, and only if, the Balancing Authority:

- is experiencing a Reliability Coordinator declared Energy Emergency Alert level and is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan.
- is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan.”

Applicability

BAL-002-WECC-3 applies to Balancing Authorities (BA), unless the BA is a member of a Reserve Sharing Group (RSG), in which case the RSG becomes the applicable entity.

Requirements

The standard consists of four requirements.

Requirement R1

- Provides that each BA and RSG must maintain a minimum amount of Contingency Reserve, except within the first sixty minutes following an event requiring the activation of Contingency Reserves, and that the Contingency Reserve must consist of any combination of a list of specified reserve types.

Requirement R2

- Reserved. Retired, subject to cyclical field tests.

²⁶ BAL-002-WECC-3, Contingency Reserve, Purpose.

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Requirement R3

- Each Sink BA and RSG must maintain an amount of Operating Reserve, in addition to the minimum Contingency Reserve in Requirement R1, equal to the amount of Operating Reserve–Supplemental for any Interchange Transaction designated as part of the Source Balancing Authority’s Operating Reserve–Supplemental or source Reserve Sharing Group’s Operating Reserve–Supplemental, except within the first sixty minutes following an event requiring the activation of Contingency Reserve.

Requirement R4

Each Source BA and RSG must maintain an amount of Operating Reserve, in addition to the minimum Contingency Reserve amounts identified in Requirement R1, equal to the amount and type of Operating Reserves for any Operating Reserve transactions for which it is the Source BA or RSG.

Reliability will be Maintained

Upon retirement of BAL-002-WECC-3, reliability will be maintained by NERC BAL-002-3, Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing Contingency Event, reinforced by the enhanced availability of resources currently unavailable under BAL-002-WECC-3.

Replacing BAL-002-WECC-3 with NERC BAL-002-3 Mitigates Reliability Gaps associated with Variable Generation

As highlighted by FERC in its Order 901, with the growing amount of variable generation replacing more responsive and dispatchable resources, the industry faces the dilemma of how to support these new resources.²⁷ Unlike traditional resources, much of the new variable generation cannot be quickly dispatched, thus creating a gap in reliability. FERC acknowledged that gap, noting that neither business-as usual nor existing reliability standards will remedy this concern. Finally, FERC also recognizes the value that steps taken must apply on a continent-wide basis.²⁸

Replacing BAL-002-WECC-3 with the continent-wide NERC BAL-002-3 takes immediate steps towards meeting FERC's concerns.

In Order 901, FERC states:

“[W]e continue to find that as the resource mix trends towards higher penetrations of IBRs, the need to reliably integrate these resources into the Bulk-Power System is expected to grow, and that the currently effective Reliability Standards do not adequately address IBR reliability risks. *The continuing risks that the increasing penetration of IBRs pose to the reliable operation of the Bulk-Power System underscore the need for mandatory Reliability Standards to address these issues on a nationwide basis.*” (Emphasis added.) Order 901, P24.

When BAL-002-WECC-3 is retired and replaced with NERC BAL-002-3, the amount and type of reserves required to be held back within the Western Interconnection will decrease. That frees those resources to be plied against load. Within the Western Interconnection, a vast majority of these sequestered resources are immediately dispatchable (such as hydro), thus serving as the perfect resource to match the less predictable response of variable generation.

²⁷ FERC Order 901, P11-15, 185 FERC ¶ 61,042, United States of America, Federal Energy Regulatory Commission (FERC), 18 CFR Part 40, Docket No. RM22-12-000; Reliability Standards to Address Inverter-Based Resources, October 19, 2023. Hereafter: Order 901

²⁸ Order 901, P24.



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By making these dispatchable resources more operationally available, the secondary benefits may be to bolster the supply of generation to the market. This potential secondary benefit directly addresses vital public interests.²⁹

Dispatchable Resources Contribute Significantly to Essential Reliability Services (ERS) ³⁰

ERSs consist of frequency control, ramping capability, and voltage control.

Frequency control is necessary because the electric grid is designed to operate at a frequency of 60 hertz (Hz). Deviations from 60 Hz can have destructive effects on generators, motors, and equipment of all sizes and types. It is critical to maintain and restore frequency after a disturbance such as the loss of generation. This requires an instantaneous (inertial) response from some resources and a fast response from other resources to slow the rate of fall during the arresting period, a fast increase in power output during the rebound period to stabilize the frequency, and a more prolonged contribution of additional power to compensate for lost resources and bring system frequency back to the normal level. Two NERC Reliability Standards address this:

- BAL-002-3 Disturbance Control Standard—Contingency Reserve from a Balancing Contingency Event
- BAL-003-2 Frequency Response and Frequency Bias Setting

Adequate ramping capability (the ability to match load and generation at all times) is necessary to maintain system frequency. Changes to the generation mix or the system operator's ability to adjust resource output can impact the ability of the operator to keep the system in balance. NERC Reliability Standard BAL-001-2 (Real Power Balancing Control Performance) addresses this issue.

Voltage must be controlled to protect system reliability and move power where it is needed in both normal operations and following a disturbance. Voltage issues tend to be local in nature, such as in sub-areas of the transmission and distribution systems. Reactive power is needed to keep electricity flowing and maintain necessary voltage levels. Several NERC Reliability Standards address voltage control.

Restated, replacing BAL-002-WECC-3 with NERC BAL-002-3 frees dispatchable resources to address FERC-identified reliability gaps created by variable generation, and may bolster vital public interests.

²⁹ "335. 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." (Emphasis added.) Order 693, P35.

³⁰ "Essential Reliability Services (ERS) are the elemental 'reliability building blocks' from resources (generation and demand) necessary to maintain Bulk Power System (BPS) reliability." NERC ERS Task Force – Scope – 2014.



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Because adequate levels of reserves are established in NERC BAL-002-3, and supported by BAL-003-2, BAL-002-WECC-3, Requirements R1 through R4 are not needed.

Replacing BAL-002-WECC-3 With NERC BAL-002-3 Provides Sufficient Reserves at a Continent-Wide Level

In the earliest stages of the Western Interconnection's strides to establish adequate Contingency Reserves, the applicable entity's reserves were established by BAL-STD-002-0, Operating Reserves, at 5% of hydro generation and 7% thermal generation (50% spinning and 50% non-spinning).³¹ These thresholds were not technically supported; they were the result of contractual negotiations. Today, such a standard would likely not be approved by FERC as violative of the principles established in FERC Order 672. (See foot note 2.)

As BAL-STD-0-2 was replaced with later iterations of that standard, the result was today's BAL-002-WECC-3, in which the Responsible Entity's reserves are set at:

R1.1.1 "The greater of either:

- The amount of Contingency Reserve equal to the loss of the most severe single contingency;³² (or)
- The amount of Contingency Reserve equal to the sum of three percent of hourly integrated Load plus three percent of hourly integrated generation."

Bullet one of BAL-002-WECC-3 describes the Most Severe Single Contingency, or MSSC.

The MSSC ensures that all entities can recover Area Control Error (ACE) within 15 minutes. The MSSC serves as the upper Contingency Reserve threshold for all interconnections, except the Western Interconnection. Within the Western Interconnection, the levels of reserve set by BAL-002-WECC-3 can exceed that of the rest of the continent that is protected by FERC-approved BAL-002-3. As a result, the Western Interconnection carries an excess of reserve that exacerbates concerns raised by FERC in Order 901 wherein FERC addresses the need for continent-wide standards to backstop the operational performance of variable generation. Comparing NERC BAL-002-3 with BAL-002-WECC-3 illustrates this outcome.

NERC BAL-002-3 states that the BA and the RSG are not subject to compliance with BAL-002-3, R1 for multiple events that exceed the MSSC. NERC BAL-002-3 requires the applicable entity to deploy Contingency Reserve *up to its MSSC*; however, it does not require Contingency Reserve deployment *beyond MSSC*.

³¹ See Attachment - Transition from 5-7 to 3-3, as described in 2005 by Merrill Schultz; see also Attachment - History of WECC Reserve 5-7 Spin Merrill Schultz, March 3, 2005; see also BAL-STD-002-0, Operating Reserves.

³² Also known as the Most Severe Single Contingency (MSSC).



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By contrast, BAL-002-WECC-3 requires the applicable entity to maintain a level of Contingency Reserves *exceeding that required under NERC BAL-002-3*, as approved by FERC. Specifically, BAL-002-WECC-3, Requirement R1 requires the applicable entity to carry reserves that equal or exceed the entity's MSSC—beyond that required by BAL-002-3 that adequately serves the balance of the continent. Among other things, this means these valuable dispatchable resources in excess of the MSSC cannot be used to meet FERC's goal of backstopping variable resources as identified in FERC Order 901.

While application of BAL-002-3 could free resources to enhance reliability, application of BAL-002-WECC-3 can inhibit reliability when resources are withheld that could otherwise serve load and backstop variable resources.

For example:

Using historical data from January 2020 - May 2024, comparison of the hourly Contingency Reserve Requirement (calculated using 3% generation and 3% load) to the Most Severe Single Contingency (MSSC), the results identified there was more than 5,000 MW of capacity available during the summertime peak hours and between 2,000-2,500 MW during the remaining hours of the year. See figure below.

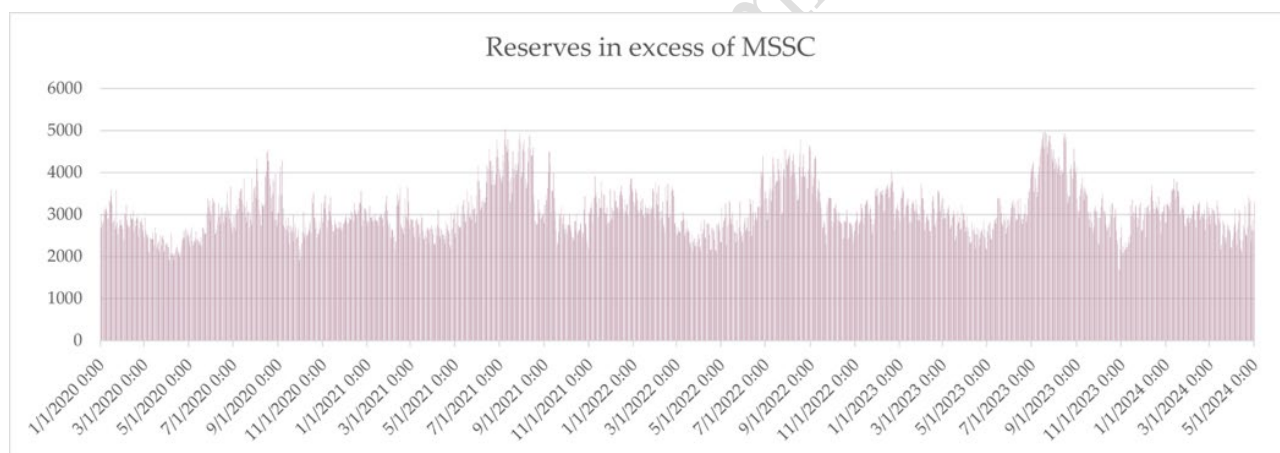


Figure 1: Reserves in excess of MSSC

The Shortened Execution Time of BAL-002-WECC-3 Inhibits Reliability Due to Market Rules in the Western Interconnection

BAL-002-WECC-3, Requirements R3 and R4 require the applicable entity to restore Contingency Reserve within 60 minutes of the initiating event. By contrast, BAL-002-3 requires the applicable entity to achieve the same task in 105 minutes. As a result, BAL-002-WECC-3 requires the performance of the same task 45 minutes earlier than its continent-wide counterpart. This shortened period inhibits reliability in that it forces the applicable entities into transactions agreed upon during an arbitrarily shortened time window. Like BAL-002-3, Requirement R1., there is no technical support suggesting

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that rushing this transaction enhances reliability —yet it remains in force 28 years after its inception, still lacking any technical support.

Further, the restoration of reserves in a 60-minute timeframe is restrictive on the entity's ability to secure additional resources within the established business practices in the region. The NERC Standard of up to 105 minutes (90 minutes after the 15 minutes Contingency Recovery Period) after the event has less commercial impact and is acceptable from both a commercial standpoint as well as an operational standpoint.

The WECC requirement of 60 minutes from start of a DCS event restricts the deficient entity from rescheduling resources to replace those that were lost during the event. Western market practices require schedules to be submitted and approved well in advance to ensure reliability, and once the schedule windows close, it is difficult to make last-minute changes. Before markets, when transactions were bilateral, a recovery of generation resources was more flexible, and could be more quickly executed.

The NERC BAL-002-3 Contingency Reserve Restoration Period of up to 105 minutes allows applicable entities to use normal market scheduling practices to replace lost generation. FERC's approval of NERC BAL-002-3 shows its belief that the NERC standard of 105 minutes (90 plus 15) is adequate and does not degrade reliability.

In attempting to meet the 60-minute restoration requirement, the applicable entity has two options.

First, the BA must carry significantly more Contingency Reserve than is required to maintain an adequate level of reliability, or second, be prepared to enter an Energy Emergency Alert 3 which allows the BA to deploy Contingency Reserves to serve load. By definition, entering into an Energy Emergency Alert is an indication of reduced reliability. Given normal scheduling practices, a 90-minute restoration time allows a Responsible Entity to restore Contingency Reserve using normal established market scheduling practices.

In addition, many entities own BES equipment in more than one interconnection. Having a single standard enhances these entities' ability to stay in compliance with the standard using consistent business practices across the interconnections.

Reserve Thresholds do Not Reflect Resource Mix

Due to the changing resource mix and the proliferation of renewable generation, battery storage, and retirements of conventional synchronous generation, resource adequacy has become a serious concern. The BAL-002-WECC standard unnecessarily ties up significant generation which is dispatchable, frequency responsive and fast ramping. Generation that could be used to meet ramps, follow variable resources, or simply meet expected loads, is committed to contingency reserve capacity that is not available to serve load. For example, Western Power Pool's Northwest Power Pool Reserve Sharing Group Northwest-Montana zone typically has a 1,200 MW MSSC, yet routinely has over 3,000 MW of



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reserves being held under the 3/3 requirement. That available capacity, usually in excess 1,800 MW, could be used to meet other reliability related services obligations. The existing 3/3 contingency reserve requirement results in the construction of at least 1800 MW of excess generation in the Northwest-Montana zone. The ability to use this generation capacity exceeding the MSSC will also allow entities to efficiently operate their facilities. Idled excess capacity will be reduced and productive generation increased.

Under NERC standard NERC BAL-002-3, the Eastern, Texas and Quebec Interconnections operate without the additional reserve requirement (3% load and 3% generation), and they are allowed to restore their reserves within 90 minutes. The changing market structure in the Western Interconnection has made it difficult to fully restore the required reserves within 60 minutes due to market scheduling timelines. This can lead to implementation of emergency procedures, typically Energy Emergency Alert 3 conditions, due to an energy shortfall precipitated by the 60-minute recovery period. When the Western markets were mostly bilateral, the 60-minute recovery was consistent with energy scheduling protocols. Market integration has altered energy scheduling protocols making it very difficult to modify schedules within 60 minutes of a generation contingency. For these reasons BAL-002-WECC-3 has become obsolete, while not enhancing reliability.

Reserves are unused or unloaded generation that are in a state of readiness in case there is sudden loss of loaded generation. When reserves are held above the MSSC, as they are in the Western Interconnection, excess capacity must be built that has no other reliability benefit. Every energy customer in the West absorbs this excess cost. Retirement of BAL-002-WECC-3 reallocates these excess resources to the benefit of the interconnection in the form of dispatchable, responsive, and available resources to reliably integrate future variable resources, such as wind, solar, and other renewable resources.

Vital Public Interests will be Enhanced^{33 34}

Market Timing Issues

The emergence of organized markets in WECC, since the inception of BAL-002-WECC-1 has brought a new dynamic in the timing and means by which the reserves are procured. The number of participants in the California ISO Energy Imbalance Market (AKA: Western Energy Imbalance Market, or WEIM)

³³ “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.” FERC Order No. 672 at P 335.

³⁴ “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.” FERC Order No. 672 at P 328.



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has grown significantly in the past several years. CAISO EIM market rules require a participating BA to balance its resources and loads 75 minutes before the next operating hour (T-75). Failure to do this can result in financial penalties to the participating BA. This rule has had the effect of discouraging any bilateral energy trading after T-75 and does not align well with a 60-minute reserve recovery time limit. No bilateral trading for replacement energy reserve is possible for the next operational hour because participating WEIM BAs cannot participate in trades within T-75.

This leaves the contingent BA in a resource short position when the 60-minute contingency restoration time expires. At this point, the contingent BA must activate emergency operating procedures up to asking the Reliability Coordinator to declare an EEA3, including load shedding to balance the contingent BA. By extending the contingency restoration time to 105 minutes (15-minute recovery plus 90-minute restoration), the contingent BA has at least 30 minutes to arrange replacement energy in a bilateral manner from other BAs or schedule their own resource in the WEIM. The additional contingency reserve recovery time allows the contingent BA to make orderly and planned adjustments and continue to serve firm load without the implementation of emergency operating procedures, up to and including shedding firm load.

FERC and the industry have determined that 90 minutes from the end of the recovery period (up to 15 minutes) is sufficient to maintain an adequate level of reliability. The shorter restoration period in the WECC creates artificial reliability issues as the applicable entity tries to rebalance supply and demand in an arbitrarily shorter period than that required in the NERC BAL-002-3.

To give a clear understanding of the impact of either option, the following example is provided.

Assume the NWPP RSG's MSSC is approximately 1,200 MW. Under BAL-002-WECC-3, the NWPP RSG would normally carry approximately 2,200-4,000 MW of Contingency Reserves depending on the time of year. Assuming the MSSC occurs, the NWPP RSG would activate 1,200 MW of its reserves and restore the ACE to the pre-event level. Members now have approximately 60 minutes to restore 1,200 MW of reserves while still carrying more than 1,000-2,800 MW, which is greater than the MSSC, assuming it was not reduced with the loss of the 1,180 MW event. See figure below.



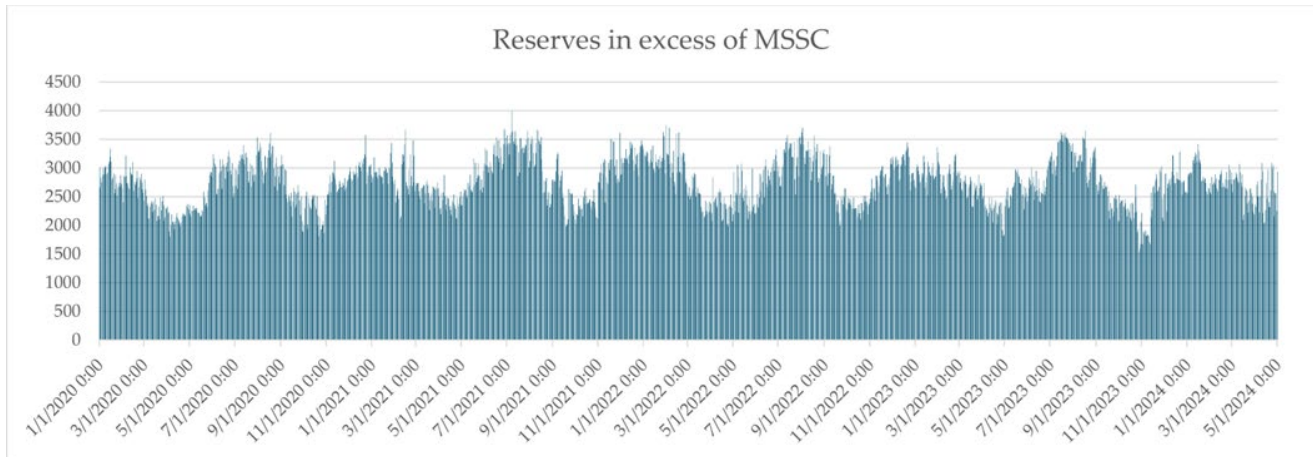
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Figure 2: Reserves in excess of MSSC; January 1, 2020, through May 1, 2024

As discussed earlier, due to market rules related to the WEIM in which most entities are taking part, new resources cannot be added to an entity's reserves for the next hour (minimum time to add a resource under the WEIM (75 minutes), or other emerging markets. If a resource is not already in the WEIM, it cannot count toward the reserves needed. So, an entity must have already been carrying reserves greater than required under the WECC standard, or it must reduce load to balance its resources and loads including reserves. (It can be argued that by reducing loads, you are putting the interconnection at greater risk because you have removed one available resource, the load, from being an option for the next event.) To avoid the declaration of an EEA, the NWPP would need to carry an additional 1,000 MW above the required reserves or declare an EEA any time the reserves need to be restored within 60 minutes of the event.

When entities withhold extra reserves to avoid the EEA, this paradigm keeps 2,500 to 4,000 MW from serving load due to the WECC current standard, which has no technical merit, as compared to the NERC Standard. These additional resources could be used to help integrate more inverter-based resources and serve loads more efficiently if it were available for load service.

Entering an Energy Emergency Alert indicates reduced reliability. Given normal scheduling practices, which require bilateral schedules to be completed and approved 75 minutes before the hour, a 60-minute restoration time does not allow adequate time for a Responsible Entity to restore Contingency Reserve in less than 60 minutes from the initiating event, potentially resulting in an Energy Emergency Alert situation.

Capacity Could be Better Used than Simply Holding Reserve

FERC and the industry have determined that the amount of Contingency Reserve needed to maintain an adequate level of reliability is the amount of Contingency Reserve needed to replace the MSSC resource. Holding Contingency Reserve more than MSSC precludes using operating reserve for other purposes, particularly load and resource balancing in real-time. As the grid transitions from



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conventional synchronous generation to more variable renewable resources, increasing capacity will be needed to manage the variability and faster ramping requirement of these resources. Allocating reserves in excess of that needed to maintain an adequate level of reliability, or MSSC, ultimately detracts from reliability.



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Conclusion

Retirement of BAL-002-WECC-3 Contingency Reserve would reduce required reserves in WECC without diminishing the ability to meet the deployment requirement. Freeing up reserves from the Contingency Reserve requirement would increase the resources available to manage variable resources and accommodate increased renewable resource integration.

The existing BAL-002-WECC-3 Contingency Reserve sets a BA's or RSG's Contingency Reserve requirement to the greater of the MSSC or 3% of the applicable entity's generation and 3% of its load. This 3/3 requirement exceeds MSSC for most responsible entities.

By contrast, NERC Standard BAL-002-3 Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing Contingency Event, Requirement R1.3.2 states that the BA/RSG is not subject to compliance with Requirement R1 for multiple events that exceed the MSSC. NERC BAL-002-3 requires the applicable entity to deploy Contingency Reserve up to the MSSC but does not require Contingency Reserve deployment beyond the MSSC.

In BAL-002-3, FERC and the industry have determined that the amount of Contingency Reserve needed to maintain an adequate level of reliability is the amount of Contingency Reserve needed to replace the MSSC resource.

Holding Contingency Reserve more than MSSC precludes using operating reserve for other purposes, particularly load and resource balancing in real time. As the grid transitions from conventional synchronous generation to more variable renewable resources, increasing capacity will be needed to manage the variability and faster ramping requirement of these resources. Allocating reserve in excess of that needed to maintain an adequate level of reliability, or MSSC, ultimately detracts from reliability.

BAL-002-WECC-3 requires an applicable entity to restore Contingency Reserve within 60 minutes of the initiating event (as opposed to up to 105 minutes in BAL-002-3), or 45 minutes sooner than required by BAL-002-3. With respect to impacts to the time to restore Contingency Reserve, FERC and the industry have determined that 90 minutes from the end of the recovery period (up to 15 minutes) is sufficient to maintain an adequate level of reliability. By contrast, the 60-minute requirement within BAL-002-WECC-3 creates potential reliability issues as an applicable entity tries to rebalance in an arbitrarily shorter period than that required in the NERC BAL-002-3. In attempting to meet the 60-minute restoration requirement, an applicable entity has two options. First, the BA must carry significantly more Contingency Reserve than is required to maintain an adequate level of reliability, or second, be prepared to enter an Energy Emergency Alert 3 and deploy Contingency Reserve to serve load. Given normal scheduling practices, a 90-minute restoration time allows an applicable entity to restore Contingency Reserve without employing emergency procedures.

Retirement of BAL-002-WECC-3 will enhance the reliable operation of the Western Interconnection by allowing resources that are presently used for overprotecting above the MSSC to be available to meet



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the immediate balancing needs of the Interconnection. This will free those resources to be used as needed in a rapidly changing system to maintain overall reliability.

Draft Working from Comments Posting 1



Response to AZPS from NERC 45-day Comment Period

WECC-0142 Drafting Team

November 21, 2025

Background

After the NERC 45 day comment period closed, NERC legal reached out to the WECC Standards department and recommended that a response be prepared by WECC and the WECC-0142 Drafting team to a comment submitted by AZPS.

WECC Staff scheduled and publicly noticed a Drafting Team meeting with the intent of addressing the comment. The Drafting Team met, discussed the comment, and provides the following response.

AZPS Comment

“AZPS does not agree with the request to retire BAL-002-WECC-3 in its entirety. From 2019 to 2024, the Western Interconnection has experienced several significant events impacting the Bulk Electric System such as extreme natural events, inverter-based resource events, and resource adequacy that may have benefited from having additional reserves to respond to contingency events. The more stringent criteria in BAL-003-WECC-3 may have alleviated some of these events.”

Response

AZPS is reasonable in expressing caution and the DT offers the following response:

WECC and NERC’s position is supported by data and regulatory precedent.

- The **continent-wide standard is sufficient**.
- There is **no technical evidence** that the extra reserves improve reliability.
- Maintaining excess Contingency Reserves **reduces system flexibility**.

The Drafting Team acknowledges AZPS’s comments, but the **technical and regulatory consensus supports retirement**—unless new studies show otherwise.

Drafting Team Meeting and AZPS Participation

It is worth noting that during the Drafting Team meeting multiple employees of AZPS were present and active on the call. This included the employee that submitted the comment and the manager of that employee. They were able to provide some background information and some context on why the comment was submitted and ultimately accepted the Drafting Teams response to the comment during the meeting. Meeting minutes are available for that meeting if needed.

From: [Crane, Donovan](#)
Bcc: [Standards Information](#); [Ahmad, Syed](#); [Ashbaker, Steve](#); [Conway, Kevin](#); [Crane, Donovan](#); [DiFabio, ChaRee](#); [Hydzik, Richard](#); [Loutan, Clyde](#); [McLean, C.D.](#); [McManus, Bart](#); [Miremadi, Ali](#); [Pfeister, Mike](#); [Wahlstrom, Alan](#)
Subject: WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Notice of Ballot
Date: Friday, April 11, 2025 11:36:00 AM
Attachments: [image001.png](#)



Project WECC-0142 – Notice of Ballot Pool Formation and Ballot

Background

On March 06, 2025 the WECC Standards Committee (WSC) approved the project **WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve** drafting team's request to put the project out for industry ballot. This project comes from a request that the Reliability Standard BAL-002-WECC-3 be retired in its entirety. The drafting team has written a white paper with justification to do so, and this white paper was put out for industry comment. The result of that comment period was 100% support for the retirement of the Standard based on the rationale presented in the white paper. The [white paper](#), comment period responses and other supporting documents can be found on the [WECC-0142 project page](#).

While the WECC IT team works to implement the new balloting software that will be used with the new WECC website that came online in 2024, the process for balloting WECC-0142 will be different than previous balloting processes. This interim balloting process will still conform to the WECC Reliability Standards Development Procedures ([RSDP](#)).

WECC-0142 Balloting Timeline

The following schedule applies to the project:

April 13th – 28th the ballot pool will be open and members of the WECC Ballot Body interested in participating in the Ballot can join the Ballot Pool.

April 30th a standards briefing meeting will be held for any clarifying questions before the Ballot opens. Information about this meeting will be provided separately and found on the calendar on the WECC website as well.

May 1st – 15th the Ballot will be open, and members of the ballot pool will have the opportunity to cast their vote and provide narrative feedback. The Ballot will be scheduled to close at 6 p.m. MDT on May 15th, 2025.

After this, WECC Staff will compile the votes and narratives and send out notice of the outcome of the Ballot

WECC-0142 Balloting Process

The Balloting Process will have the following steps.

1. 4/11/2025 - WECC Standards staff will send an email notification to the Standards Distribution list with the balloting information and process with a solicitation for current Ballot Body members to join the pool. This is that notification.
2. 4/13/2025 – Ballot Pool Formation Opens - To join the pool an interested member of

the Ballot Body must send an email to Standards@wecc.org with the following information that can be validated against the Ballot Body

- a. Their Name,
 - b. Their Entity's Name,
 - c. Sector(s) they are joining under
 - d. Stated interest in joining the WECC-0142 Ballot Pool
3. 4/28/2025 6:00 p.m. MDT – Ballot Pool Closes
 4. 4/30/2025 - WECC Standards staff will facilitate the Standards Briefing call
 5. WECC Staff will send another email notification to the formed ballot pool for a reminder on when and how to cast their votes once the Ballot Pool formation closes and the Standards briefing call is complete.
 6. Standards Staff will have WECC IT open a button on the WECC Regional Standards Voting web page.
 7. 5/1/2025 – Ballot Voting Opens - Those who have registered for and been validated to be part of the Ballot Pool will cast their votes.
 8. 5/15/2025 6:00 p.m. MDT – Ballot Voting Closes

Procedural Notes

The RSDP state the following when it comes to noticing the Ballot and forming the discrete Ballot Pool from the larger Ballot Body:

“Notice that a Ballot Pool is forming will be sent via the SEL and posted to the WECC website. That notice shall contain, at a minimum, the following information:

1. Identification of the RRS or CRT;
2. The proposed action to be taken (e.g., Notice of Ballot Pool Formation / Notice of Ballot);
3. When the Ballot Pool will open and close;
4. When the ballot will take place;
5. How to cast a vote; and,
6. The WECC website location of the proposed RRS or CRT and related documents for review. “

As well as

“Applications received less than five days prior to the opening of a Ballot Pool may not be considered for inclusion in that Ballot Pool unless specifically allowed by the Director of Standards (DOS).”

Both of these statements can be found on page 14 of the [Reliability Standards Development Procedures](#) found on WECC's website.

Please reach out to me with any questions or comments that you may have.

Donovan Crane

Senior Engineer, Standards Development

Phone (385) 408-9296

www.wecc.org



Unofficial Comment Form

WECC-0142

**Request to Retire BAL-002-WECC-3,
Contingency Reserve**

Posting for Comment 1

Do not use this form for submitting comments. Use the hyperlink or [Submit Comments](#) button under the “Submit and Review Comments” accordion on the project page to submit comments on **Project WECC-0142 - Request to Retire BAL-002-WECC-3, Contingency Reserve by 6:00 pm (Mountain) January 15th, 2025.**

All documents associated with the project and posting can be found on the [Project Page](#) under the “Posting 1 for Comment” accordion. If you have questions, please contact [Donovan Crane](#), Senior Engineer, Standards.

Background Information

This project is a request to retire BAL-002-WECC-3 in its entirety. The Drafting Team has put together a white paper that details the rationale for retiring BAL-002-WECC-3 and is soliciting comments about that paper. The hope is to get feedback, gauge support, and then prepare to submit the request to NERC to retire the Standard.

Questions

1. Do you agree with the Drafting Team's request for the Standard to be retired? Yes/No with a narrative explanation.
2. Do you agree with the Drafting Team's rationale for requesting the retirement of the Standard? Yes/no with a narrative explanation
3. Do you have any other rationale that the drafting team may not have thought of or included in this document? Yes/No with a narrative explanation

Posting 1

The WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Drafting Team (DT) thanks everyone who submitted comments on the proposed document.

Posting

This project was posted for a 60-day public comment period from November 15, 2024 through January 15, 2025.

WECC distributed the notice for the posting on November 15, 2024. The DT asked stakeholders to provide feedback on the proposed document through a standardized electronic template. 22 comments were received during the 60-day posting period.

Location of Comments

All comments received on the project can be viewed in their original format on the WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve project page under the “Submit and Review Comments” accordion.

Changes in Response to Comment

Clarifying changes have been made to the white paper. These changes did not affect the substance or change the rationale that the drafting team put forth for the comment period. Besides grammar updates, some changes made to the white paper are:

- *In the Executive Summary Section*
 - Clarifying that BAL-002-WECC has required most but not all WECC entities to hold more reserves.
 - Changing “reserves” in paragraph 4 to “the greater of, either the amount of Contingency Reserve equal to the loss of the most severe single contingency or the amount of Contingency reserve equal to the sum of” to be clearer.
 - Other minor wording changes.
- *Introduction*

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

- Minor wording changes.
- *Procedural History*
 - Updating dates to 2025 and clarifying wording changes.
- *Reliability will be maintained*
 - Removed a subjective phrase about cost from two sentences.

Minority View

During the 60-day comment period no minority view was presented.

Effective Date

TBD

Action Plan

The DT has voted at their 1/21/2025 meeting to request approval for Ballot from the WSC.

Contacts and Appeals

If you feel your comment has been omitted or overlooked, please contact [Donovan Crane](#), Senior Engineer, at (385) 408-9296. In addition, there is a WECC Reliability Standards appeals process.

Commenter		Organization
1	Kevin Conway	Western Power Pool
2	Steven Rueckert	WECC
3	Rebecca Zahler	PUD No. 1 of Chelan County
4	Adrian Andreoiu	BC Hydro
5	Lindsay Wickizer	Pacificorp
6	Holly Mitchell	Northwestern Energy
7	Jennie Wike	Tacoma Power
8	Michael Jang	Seattle City Light
9	ChaRee DiFabio	Western Power Pool
10	Anna Lavik	Puget Sound Energy
11	Marie Anderson	GCPUD
12	Alan Wahlstrom	Southwest Power Pool
13	Dwanique Spiller	NV Energy
14	Steven Ashbaker	Western Electricity Coordinating Council



**WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to
Comments, Posting 1**

Commenter		Organization
15	Tim Kelly	SMUD, BANC
16	Cain Braveheart	Bonneville Power Administration
17	Diana Torres	Imperial Irrigation District
18	Mike Pfeister	SRP
19	Ben Hammer	Western Area Power Administration - Rocky Mountain Region (NCR05464), Western Area Power Administration -Desert Southwest Region (NCR05461), Western Area Power Administration – Upper Great Plains Region (NCR05467)
20	Pablo Onate	El Paso Electric
21	Robert Follini	Avista Corporation
22	Brooke Jockin	Portland General Electric (PGE)

**WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to
Comments, Posting 1**

Index to Questions, Comments, and Responses

Question

1. Do you agree with the Drafting Team's request for the Standard to be retired? Yes/No with a narrative explanation.
2. Do you agree with the Drafting Team's rationale for requesting the retirement of the Standard? Yes/no with a narrative explanation
3. Do you have any other rationale that the drafting team may not have thought of or included in this document? Yes/No with a narrative explanation

Posting 1

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

1. Do you agree with the Drafting Team's request for the Standard to be retired? Yes/No with a narrative explanation.

Summary Consideration: See summary in the preamble of this document.	
Commenter	Comment
Kevin Conway	Yes, the Western Power Pool supports the retirement of BAL-002-WECC-3
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Rebecca Zahler	Yes, CHPD concurs with the Drafting Team's request to retire the BAL-002-WECC Standard. We support the rationale outlined in the WECC-0142 Attachment A SAR and the WECC-0142 BAL-002-WECC-3 White Paper.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Adrian Andreoiu	Yes
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Lindsay Wickizer	Yes
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Holly Mitchell	Yes. The retirement of this standard is long overdue. This retirement will enable WECC to be in line with the continent-wide NERC BAL-002-3 as the industry rapidly evolves to integrate IBRs and other alternative energy sources. The retirement will also enhance reliable operations by removing unnecessarily restrictive practices.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

Jennie Wike`	Yes
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Michael Jang	Yes, SCL is in agreement and full support with the Drafting Team's request for the Standard to be retired. The retirement of the WECC specific Reliability Standard does not diminish or lessen the ability, intent and actions that are taken during events the standard was initially created to address.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
ChaRee DiFabio	Yes. In review of the NWPP RSG Data, the group holds excess contingency reserve, at least two to three times the MSSC, that its Participants could utilize to maintain other operational needs, such as supporting the variable resources and frequency response. In addition, as already noted, it has economic impacts to these participants since there are associated costs for holding back the Contingency Reserve that could be used elsewhere to maintain reliability. Last, the timing requirement from 60 minutes to 90 minutes does allow a more practical restoration period to recover from the event and restore contingency reserve, which should decrease the numbers and level of a potential EEA3 since the entity will have time to assess more rational restoration actions.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Anna Lavik	Yes, PSE agrees that retirement would improve reliability and free up available generation.
Response	

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Marie Anderson	Yes
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Alan Wahlstrom	Yes, the western interconnect is held at a higher standard than the other Interconnects, It is unfair and places an additional burden on operating resources as compared to the other Interconnects.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Dwanique Spiller	1. Yes, NV Energy agrees with the Drafting Team's request and that it provides operational efficiency, maintains reliability, simplifies compliance, facilitates better integration of IBRs, and provides economic benefits.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Steven Ashbaker	Yes, I agree with the Drafting Teams request for the Standard to be retired. Retirement of this standard would free up excess reserves being held above the MSSC requirements to serve system demand, without reducing reliability in the WI. This additional available capacity would be better used to address the issues associated with IBR integration and variable generation.
Response	
The Drafting Team appreciates your comments and input in this process. Your suggestions have been taken into account in the revisions that have been made to the white paper.	

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

Commenter	Comment
Tim Kelley	Yes. SMUD and BANC agree with the Drafting Team that holding Contingency Reserves at a level of 3% load plus 3% generation is not technically supported and is more than what is needed for bulk power system reliability. We recognize that BAL-002-WECC-3 may provide additional reliability for the large system events, such as double Palo Verde unit tripping or Northwest RAS generation tripping, which has occurred in the past. The Drafting Team should consider adding some analysis in the white paper showing that the reliability risks associated with these big system events could still be adequately addressed with the retirement of BAL-002-WECC-3. In addition, BAL-002-WECC-3 Requirement R3 requires each sink BA and each sink RSG to carry additional Contingency Reserves for non-firm purchases of Contingency Reserves, and BAL-002-WECC-3 Requirement R4 requires each source BA and each sink RSG to carry additional Contingency Reserves for firm sales of Contingency Reserves. We recommend that the Drafting Team add some rationale in the white paper for the retirement of these two requirements.
Response	
The Drafting Team appreciates your comments and input in this process. Your suggestions have been taken into account in the revisions that have been made to the white paper.	
Commenter	Comment
Cain Braveheart	Yes. Bonneville Power Administration (BPA) believes the current standard requires WECC entities to hold more contingency reserves than is necessary and allows only 60 minutes to fully recover from an event. With the number of variable generation resources coming online, the capacity being unused by holding too much for contingency reserve can be better allocated to ensure reliability of the interconnection and to help balance the variable energy resources. BPA believes the timing required by the markets causes issues when trying to replenish reserves in the 60

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

	minutes allocated. The 105 minutes allotted in BAL-002-3 (90 minutes after the Contingency Event Recovery Period) is better suited for operations in a market environment.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Diana Torres	Yes, As IID is a participant in the NWPP Reserve Sharing Group, those Contingency Reserves must always be met and held for use. As part of the RSG our reliability will not be compromised. Communication between the RSG and the BA have remained strong and will correspond and respect the BAL-002-3 NERC standard that will take the place of BAL-002-WECC-3 standard.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Mike Pfeister	Yes, SRP does agree with the Drafting Team's request for BAL-002-WECC-3 to be retired. NERC BAL-002-3 has a proven history of meeting the needs of each interconnection. The requirements in BAL-002-WECC-3 have not been found to be necessary in their history in the Western Interconnection. With more variable resources in the interconnection it makes sense to maximize the use of freed up capacity, with the retirement of BAL-002-WECC-3, to be used for regulation and capacity needs.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Ben Hammer	Yes, Western Area Power Administration (WAPA) enthusiastically supports the retirement of the BAL-002-WECC-3 standard. WAPA operates three Balancing Authorities (WALC, WACM, & WAUW) in the WECC

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

	footprint. Each of our BAs also participate in the Northwest Power Pool reserve sharing group. This participation has allowed us to reduce our Contingency Reserve obligation while maintaining reliability. All three BAs also participate in organized imbalance markets. Operating our BAs and meeting all the NERC reliability standards efficiently and economically has become increasingly more difficult over the last few years. We have a finite amount of capacity on our federal hydro resources to balance our loads and resources, maintain reliability, and satisfy our statutory delivery obligations. This constraint has been negatively impacted by the prolonged drought in the West and the increase of Solar and Wind resources that have interconnected to our systems. By retiring the more stringent WECC standard, WAPA would realize a significant reduction to the amount of capacity we would have to commit for Contingency Reserves and would free up this capacity to manage the variability of existing and future variable renewable resources. Additionally, WAPA supports extending the time requirement for restoring Contingency Reserves after an event from 60 minutes to 105 minutes. This approach makes more operational and commercial sense. Western market practices have made the restoration of Contingency Reserves more challenging and introduced more economic and operational risks. WAPA is concerned with maintaining a standard that is not proven, not evidence-based, and inconsistent with the rest of the continent.
Response	
The Drafting Team appreciates your comments and input in this process. Your suggestions have been taken into account in the revisions that have been made to the white paper.	
Commenter	Comment
Pablo Oñate	Yes. Historical background and technical rationale prompt merit for standard retirement.

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Robert Follini	YES. The request to retire BAL-002-WECC-3 is justified and needed for the Western Interconnection. The simple facts clearly articulated in the White Paper that system reliability is not impacted negatively by this change, and is likely enhanced, while ensuring better use of existing generating resources, both variable and base, should be clear enough justification to retire BAL-002-WECC-3.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Brooke Jockin	Yes.
Response	
The Drafting Team appreciates your comments and input in this process.	

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

2. Do you agree with the Drafting Team's rationale for requesting the retirement of the Standard? Yes/no with a narrative explanation

Summary Consideration: See summary in the preamble of this document.	
Commenter	Comment
Kevin Conway	Yes, the Western Power Pool supports the Drafting Team's rationale for requesting retirement of BAL-002-WECC-3
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Rebecca Zahler	Yes, CHPD concurs with the Drafting Team's rationale for requesting retirement of the BAL-002-WECC Standard. We support the rationale outlined in the WECC-0142 Attachment A SAR and the WECC-0142 BAL-002-WECC-3 White Paper.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Adrian Andreoiu	Yes
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Lindsay Wickizer	Yes
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Holly Mitchell	Yes. The requirements of NERC BAL-002-3 are sufficient to maintain grid reliability for Balancing Contingency Events, the 60-minute recovery timeframe in BAL-002-WECC-3 is not consistent with the current market landscape and

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

	exposes entities to greater risk for minimal reliability benefit
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Jennie Wike`	Yes
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Michael Jang	Yes, SCL is in agreement Drafting Team's rationale for requesting the retirement of the Standard. SCL strongly agrees wiht the rationale that the existing BAL-002-WECC-3, Contingency Reserve requirement does not enhance reliability of the interconnection. In fact, it decreases reliability of the interconnection. For SCL, being a heavily sourced hydro generation facility Balancing Authority, the current BAL-002-WECC-3, Contingency Reserve requirement results in a major negative operational impact due to our limited (cfs inflow & safe reservoir levels) fuel supply and no meaningful reliability benefit for maintaining compliance for it.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
ChaRee DiFabio	Yes. The drafting team has been able to utilize historical information and data in support of this rationale.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

Anna Lavik	Yes, PSE only sees benefits of the retirement of BAL-002-WECC-3 and agrees with the rationale provided by the Drafting team.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Marie Anderson	Yes
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Alan Wahlstrom	Yes, having operating reserves to cover the largest contingency makes sense because you are recovering what is lost but the 3% rule there is no technical justification. Is 3% right amount? should it be 2% or 4%. Does this requirement make sense today? This is not for the team but maybe for WECC, could a study be developed with different IBR penetration to verify reliable operation with the 60 min recovery and the 3% rule reserve.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Dwanique Spiller	2. Yes, NV Energy agrees with the rationale that retiring the Standard provides alignment with the rest of the continent and FERC Order 901 and frees up resources to be used more effectively against ever increasing load demands and installation of variable generation.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

Steven Ashbaker	Yes, I agree with the Drafting Team's rational for requesting retirement. See response to Q1.
Response	
The Drafting Team appreciates your comments and input in this process. Your suggestions have been taken into account in the revisions that have been made to the white paper.	
Commenter	Comment
Tim Kelley	Yes. SMUD and BANC agree with the Drafting Team's rationale for requesting the retirement of the Standard. However, the rationale could be bolstered if the Drafting Team added some analysis in the White Paper showing that the reliability risks associated with the big system events could still be adequately addressed with the retirement of BAL-002-WECC-3 and add some rationale to address the retirement of Requirements R3 and R4.
Response	
The Drafting Team appreciates your comments and input in this process. Your suggestions have been taken into account in the revisions that have been made to the white paper.	
Commenter	Comment
Cain Braveheart	Yes. See BPA's response to question 1.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Diana Torres	Yes, After reviewing the drafting team's paper IID is in agreement with the request for retirement. The rationale clearly states the differences of the two standards and there are concrete explanations as to the requirements for BAL-002-3 standard to be followed. IID will abide and implement as needed.
Response	
The Drafting Team Appreciates your comments and input in this process.	

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

Commenter	Comment
Mike Pfeister	Yes, the Drafting Team's rationale is sound. We have history in the Western Interconnection and other interconnections to support this rationale.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Ben Hammer	Yes, see response to question #1
Response	
The Drafting Team appreciates your comments and input in this process. Your suggestions have been taken into account in the revisions that have been made to the white paper.	
Commenter	Comment
Pablo Oñate	Yes. See response to #1
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Brooke Jockin	Yes.
Response	
The Drafting Team appreciates your comments and input in this process.	

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

3. Do you have any other rationale that the drafting team may not have thought of or included in this document? Yes/No with a narrative explanation

Summary Consideration: See summary in the preamble of this document.	
Commenter	Comment
Kevin Conway	The Western Power Pool has no additional rationale that the Drafting Team should consider.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Rebecca Zahler	Yes, CHPD concurs with the Drafting Team's rationale for requesting retirement of the BAL-002-WECC Standard. We support the rationale outlined in the WECC-0142 Attachment A SAR and the WECC-0142 BAL-002-WECC-3 White Paper.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Steve Rueckert	I have several clarifying comments: In the Executive Summary it states "BAL-002-WECC has always required holding more reserves..." This is not true. BAL-002-WECC generally requires more reserves because it requires the "greater of 3% Load and 3% generation or MSSC" but a BA or RSG may at times have MSSC as the greater of, so that would be the same as the NERC Standard. There is a sentence that says the applicable entity must hold reserves based on three percent of load and three percent of generation. This is not true. BAL-002-WECC requires "the greater of" three percent of load and three percent of generation or MSSC.

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

		On page 17, directly below the CRO-MSSC graph, the title says "the shortened execution time of BAL-003-WECC-3..." It should be BAL-002-WECC-3. On page 19 it states that "Every energy customer in the absorbs this excess cost." Should it state "Every energy customer int the West absorbs this excess cost?" On page 19 it again refers to BAL-003-WECC-3. It should be BAL-002-WECC-3. On page 23, the last sentence of the first paragraph doesn't seem to make sense. The ending says "declare an EEA any time the reserves need restored within 60 minutes of the event." Seems like a word may be missing. On page 24 towards the end of the last paragraph reference is made to an Emergency Alert 3. Should this say and Energy Emergency Alert 3?
Response		
The Drafting Team appreciates your comments and input in this process. Your suggestions have been taken into account in the revisions that have been made to the white paper.		
Commenter	Comment	
Lindsay Wickizer	No	
Response		
The Drafting Team appreciates your comments and input in this process.		
Commenter	Comment	
Holly Mitchell	No additional rationale.	
Response		
The Drafting Team appreciates your comments and input in this process.		
Commenter	Comment	

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

Jennie Wike`	No, Tacoma Power concurs with the rationale proposed by the drafting team and is supportive of this effort to retire BAL-002-WECC-3 entirely.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Michael Jang	No. SCL does not have other rationale that the drafting team may not have thought of or included in the document.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
ChaRee DiFabio	No
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Anna Lavik	PSE does not have any additional rational that was overlooked by the drafting team.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Marie Anderson	Yes
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Alan Wahlstrom	Yes More organizations are becoming BA's in the west with many of these organizations presently having a BA footprint in the Eastern Interconnect. The BA operation in

WECC-0142: Request to Retire BAL-002-WECC-3, Contingency Reserve Response to Comments, Posting 1

	the west must be different than the east, causing the BA to have different sets of operating criteria. If the NERC BAL-2 is excepted for the west it would provide continuity and simplifying the overall operation of the BA.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Dwanique Spiller	No.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Steven Ashbaker	Provided Redline comments and proposed edits to Donovan Crane, Staff and Kevin Conway, DT Chair.
Response	
The Drafting Team appreciates your comments and input in this process. Your suggestions have been taken into account in the revisions that have been made to the white paper.	
Commenter	Comment
Tim Kelley	No.
Response	
The Drafting Team appreciates your comments and input in this process. Your suggestions have been taken into account in the revisions that have been made to the white paper.	
Commenter	Comment
Cain Braveheart	No. BPA believes the rationale provided by the drafting team offers a clear explanation and technical justification for the full retirement of BAL-002-WECC-3.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment

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Diana Torres	Yes, the IID has reviewed and respects the rationale of the Drafting Team on the request to retire BAL-002-WECC-3.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Mike Pfeister	SRP has no other rationale to add to the Drafting Team's work.
Response	
The Drafting Team appreciates your comments and input in this process.	
Commenter	Comment
Ben Hammer	No
Response	
The Drafting Team appreciates your comments and input in this process. Your suggestions have been taken into account in the revisions that have been made to the white paper.	
Commenter	Comment
Pablo Oñate	No. The whitepaper represents ideas well and EPE subscribes to its rationale.
Response	
The Drafting Team appreciates your comments and input in this process.	

NERC Posting – Record of Development

BAL-002-WECC-3

- (1) Clean
- (2) White Paper
- (3) Project Roadmap
- (4) Announcement
- (5) Unofficial Comment Form (Word)
- (6) Comments Received

A. Introduction

1. **Title:** Contingency Reserve
2. **Number:** BAL-002-WECC-3
3. **Purpose:** To specify the quantity and types of Contingency Reserve required to ensure reliability under normal and abnormal conditions.
4. **Applicability:**
 - 4.1. **Functional Entities:**
 - 4.1.1 **Balancing Authority**
 - 4.1.1.1 The Balancing Authority is the responsible entity unless the Balancing Authority is a member of a Reserve Sharing Group, in which case, the Reserve Sharing Group becomes the responsible entity.
 - 4.1.2 **Reserve Sharing Group**
 - 4.1.2.1 The Reserve Sharing Group when comprised of a Source Balancing Authority becomes the source Reserve Sharing Group.
 - 4.1.2.2 The Reserve Sharing Group when comprised of a Sink Balancing Authority becomes the sink Reserve Sharing Group.
5. **Effective Date:** Immediately upon receipt of regulatory approval.

B. Requirements and Measures

- R1. Each Balancing Authority and each Reserve Sharing Group shall maintain a minimum amount of Contingency Reserve, except within the first sixty minutes following an event requiring the activation of Contingency Reserve, that is: *[Violation Risk Factor: High] [Time Horizon: Real-time operations]*
 - 1.1. The greater of either:
 - The amount of Contingency Reserve equal to the loss of the most severe single contingency;
 - The amount of Contingency Reserve equal to the sum of three percent of hourly integrated Load plus three percent of hourly integrated generation.
 - 1.2. Composed of any combination of the reserve types specified below:
 - Operating Reserve—Spinning
 - Operating Reserve—Supplemental
 - Interchange Transactions designated by the Source Balancing Authority as Operating Reserve—Supplemental

- Reserve held by other entities by agreement that is deliverable on Firm Transmission Service
 - A resource, other than generation or load, that can provide energy or reduce energy consumption
 - Load, including demand response resources, Demand-Side Management resources, Direct Control Load Management, Interruptible Load or Interruptible Demand, or any other Load made available for curtailment by the Balancing Authority or the Reserve Sharing Group via contract or agreement.
 - All other load, not identified above, once the Reliability Coordinator has declared an energy emergency alert signifying that firm load interruption is imminent or in progress.
- 1.3.** Based on real-time hourly load and generating energy values averaged over each Clock Hour (excluding Qualifying Facilities covered in 18 C.F.R. § 292.101, as addressed in FERC Order 464).
- 1.4.** An amount of capacity from a resource that is deployable within ten minutes.
- M1.** Each Balancing Authority and each Reserve Sharing Group will have documentation demonstrating its Contingency Reserve was maintained, except within the first sixty minutes following an event requiring the activation of Contingency Reserve.

Part 1.1

Each Balancing Authority and each Reserve Sharing Group will have dated documentation that demonstrates its Contingency Reserve was maintained in accordance with the amounts identified in Requirement R1, Part 1.1, except within the first sixty minutes following an event requiring the activation of Contingency Reserve.

Attachment A is a practical illustration showing how the generation amount may be calculated under Requirement R1.

- Where Dynamic Schedules are used as part of the generation amount upon which Contingency Reserve is predicated, additional evidence of compliance with Requirement R1, Part 1.1 may include, but is not limited to, documentation showing a reciprocal acknowledgement as to which entity is carrying the reserves. This transfer may be all or some portion of the physical generator and is not limited to the entire physical capability of the generator.
- Where Pseudo-Ties are used as part of the generation amount upon which Contingency Reserve is predicated, additional evidence of compliance with Requirement R1, Part 1.1, may include, but is not limited to, documentation accounting for the transfers included in the Pseudo-Ties.

Part 1.2

Each Balancing Authority and each Reserve Sharing Group will have dated documentation that demonstrates compliance with Requirement R1, Part 1.2.

Evidence may include, but is not limited to, documentation that reserves were comprised of the types listed in Requirement R1, Part 1.2 for purposes of meeting the Contingency Reserve obligation of Requirement R1. Additionally, for purposes of the last bullet of Requirement R1, Part 1.2, evidence of compliance may include, but is not limited to, documentation that the reliability coordinator had issued an energy emergency alert, indicating that firm Load interruption was imminent or was in progress.

Part 1.3

Each Balancing Authority and each Reserve Sharing Group will have dated documentation that demonstrates compliance with Requirement R1, Part 1.3. Evidence of compliance with Requirement R1, Part 1.3 may include, but is not limited to, documentation that Contingency Reserve amounts are based upon load and generating data averaged over each Clock Hour and excludes Qualifying Facilities covered in 18 C.F.R. § 292.101, as addressed in FERC Order 464.

Part 1.4

Evidence of compliance with Requirement R1, Part 1.4 may include, but is not limited to, documentation that the reserves maintained to comply with Requirement R1, Part 1.4 are fully deployable within ten minutes.

R2. Reserved.

M2. Reserved.

R3. Each Sink Balancing Authority and each sink Reserve Sharing Group shall maintain an amount of Operating Reserve, in addition to the minimum Contingency Reserve in Requirement R1, equal to the amount of Operating Reserve—Supplemental for any Interchange Transaction designated as part of the Source Balancing Authority’s Operating Reserve—Supplemental or source Reserve Sharing Group’s Operating Reserve—Supplemental, except within the first sixty minutes following an event requiring the activation of Contingency Reserve. [*Violation Risk Factor: High*] [*Time Horizon: Real-time operations*]

M3. Each Sink Balancing Authority and each sink Reserve Sharing Group will have dated documentation demonstrating it maintained an amount of Operating Reserve, in addition to the Contingency Reserve identified in Requirement R1, equal to the amount of Operating Reserve—Supplemental for any Interchange Transaction designated as part of the Source Balancing Authority’s Operating Reserve—Supplemental or source Reserve Sharing Group’s Operating Reserve—Supplemental, for the entire period of the transaction, except within the first sixty minutes following an event requiring the activation of Contingency Reserves, in accordance with Requirement 3.

R4. Each Source Balancing Authority and each source Reserve Sharing Group shall maintain an amount of Operating Reserve, in addition to the minimum Contingency Reserve amounts identified in Requirement R1, equal to the amount and type of

Operating Reserves for any Operating Reserve transactions for which it is the Source Balancing Authority or source Reserve Sharing Group. *[Violation Risk Factor: High]*
[Time Horizon: Real-time operations]

- M4.** Each Source Balancing Authority and each source Reserve Sharing Group will have dated documentation that demonstrates it maintained an amount of additional Operating Reserves identified in Requirement R1, greater than or equal to the amount and type of that identified in Requirement 4, for the entire period of the transaction.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority:

For entities that do not work for the Regional Entity, the Regional Entity shall serve as the Compliance Enforcement Authority.

For 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.

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.

1.2. Compliance Monitoring and Assessment Processes:

Compliance Audit

Self-Certification

Spot-Checking

Compliance Investigation

Self-Reporting

Complaint

1.3. Evidence Retention:

The following evidence retention periods 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 Authority and each Reserve Sharing Group shall keep evidence for Requirement R1 through R4 for three years plus calendar current.

1.4. Additional Compliance Information:

- 1.4.1** This Standard shall apply to each Balancing Authority and each Reserve Sharing Group that has registered with WECC as provided in Part 1.4.2 of Section C.

Each Balancing Authority identified in the registration with WECC as provided in Part 1.4.2 of Section C shall be responsible for compliance with this Standard through its participation in the Reserve Sharing Group and not on an individual basis.

- 1.4.2** A Reserve Sharing Group may register as the Responsible Entity for purposes of compliance with this Standard by providing written notice to the WECC: 1) indicating that the Reserve Sharing Group is registering as the Responsible Entity for purposes of compliance with this Standard, 2) identifying each Balancing Authority that is a member of the Reserve Sharing Group, and 3) identifying the person or organization that will serve as agent on behalf of the Reserve Sharing Group for purposes of communications and data submissions related to or required by this Standard.

- 1.4.3** If an agent properly designated in accordance with Part 1.4.2 of Section C identifies individual Balancing Authorities within the Reserve Sharing Group responsible for noncompliance at the time of data submission, together with the percentage of responsibility attributable to each identified Balancing Authority, then, except as may otherwise be finally determined through a duly conducted review or appeal of the initial finding of noncompliance: 1) any penalties assessed for noncompliance by the Reserve Sharing Group shall be allocated to the individual Balancing Authorities identified in the applicable data submission in proportion to their respective percentages of responsibility as specified in the data submission, 2) each Balancing Authority shall be solely responsible for all penalties allocated to it according to its percentage of responsibility as provided in subsection 1) of this Part 1.4.3 of Section C, and 3) neither the Reserve Sharing Group nor any member of the Reserve Sharing Group shall be responsible for any portion of a penalty assessed against another member of the Reserve Sharing Group in accordance with subsection 1) of this Part 1.4.3 of Section C (even if the member of Reserve Sharing Group against which the penalty is assessed is not subject to or otherwise fails to pay its allocated share of the penalty).

- 1.4.4** If an agent properly designated in accordance with Part 1.4.2 of Section C fails to identify individual Balancing Authorities within the Reserve Sharing Group responsible for noncompliance at the time of data submission or fails to specify percentages of responsibility attributable to each identified Balancing Authority, any penalties for noncompliance shall be assessed against the agent on behalf of the Reserve Sharing Group, and it shall be

the responsibility of the members of the Reserve Sharing Group to allocate responsibility for such noncompliance.

- 1.4.5** Any Balancing Authority that is a member of a Reserve Sharing Group that has failed to register as provided in Part 1.4.2 of Section C shall be subject to this Standard on an individual basis.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	The Balancing Authority or the Reserve Sharing Group that incurs one Clock Hour, during a calendar month, in which Contingency Reserve is less than 100% but greater than or equal to 90% of the required Contingency Reserve amount, with the characteristics specified in Requirement R1.	The Balancing Authority or the Reserve Sharing Group that incurs one Clock Hour, during a calendar month, in which Contingency Reserve is less than 90% but greater than or equal to 80% of the required Contingency Reserve amount, with the characteristics specified in Requirement R1.	The Balancing Authority or the Reserve Sharing Group that incurs one Clock Hour, during a calendar month, in which Contingency Reserve is less than 80% but greater than or equal to 70% of the required Contingency Reserve amount, with the characteristics specified in Requirement R1.	The Balancing Authority or the Reserve Sharing Group that incurs one Clock Hour, during a calendar month, in which Contingency Reserve is less than 70% of the required Contingency Reserve amount, with the characteristics specified in Requirement R1.
R2.	Reserved.			
R3.	The Balancing Authority or the Reserve Sharing Group that incurs one hour, during a calendar month, in which Contingency Reserve is less than 100% but greater than or equal to 90% of the required Operating Reserve amount specified in Requirement R3.	The Balancing Authority or the Reserve Sharing Group that incurs one hour, during a calendar month, in which Contingency Reserve is less than 90% but greater than or equal to 80% of the required Operating Reserve amount specified in Requirement R3.	The Balancing Authority or the Reserve Sharing Group that incurs one hour, during a calendar month, in which Contingency Reserve is less than 80% but greater than or equal to 70% of the required Operating Reserve amount specified in Requirement R3.	The Balancing Authority or the Reserve Sharing Group that incurs one hour, during a calendar month, in which Contingency Reserve is less than 70% of the required Operating Reserve amount specified in Requirement R3.
R4.	The Balancing Authority or the Reserve Sharing Group	The Balancing Authority or the Reserve Sharing Group	The Balancing Authority or the Reserve Sharing Group	The Balancing Authority or the Reserve Sharing Group

	that incurs one hour, during a calendar month, in which Contingency Reserve Operating Reserve is less than 100% but greater than or equal to 90% of the required Operating Reserve amount specified in Requirement R4.	that incurs one hour, during a calendar month, in which Contingency Reserve Operating Reserve is less than 90% but greater than or equal to 80% of the required Operating Reserve amount specified in Requirement R4.	that incurs one hour, during a calendar month, in which Contingency Reserve Operating Reserve is less than 80% but greater than or equal to 70% of the required Operating Reserve amount specified in Requirement R4.	that incurs one hour, during a calendar month, in which Contingency Reserve Operating Reserve is less than 70% of the required Operating Reserve amount specified in Requirement R4.
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D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
1	October 29, 2008	Adopted by NERC Board of Trustees	
1	October 21, 2010	Order issued remanding BAL-002-WECC-1	
2	November 7, 2012	Adopted by NERC Board of Trustees	
2	November 21, 2013	FERC Order issued approving BAL-002-WECC-2. (Order becomes effective 1/28/14.)	
2a	December 1, 2015	Approved by WECC Board of Directors	Clarified resources available for use in Requirement R2
2a	January 24, 2017	FERC approved	The Interpretation provides clarification regarding the types of resources that may be used to satisfy Contingency Reserve.
3	August 15, 2019	Adopted by the NERC Board of Trustees	The Interpretation was removed. Requirement R2 was deleted. Template and formatting were updated. Syntax and verb tense in Guideline section were corrected.
3	April 15, 2021	FERC approved	Docket(s): RM19-20-000 Description: Order No. 876: Final Rule re WECC Regional Reliability Standard BAL-002-WECC-3 (Contingency Reserve) under RM19-20.
3	June 28, 2021	Effective Date of Standard	

Standard Attachments

Attachment A

Attachment A is illustrative only; it is not a requirement. Requirement R1 calls for an amount of Contingency Reserve to be maintained, predicated on an amount of generation and load required in Requirement R1, Part 1.1., specifically:

“1.1 The greater of either:

- The amount of Contingency Reserve equal to the loss of the most severe single contingency;
- The amount of Contingency Reserve equal to the sum of three percent of hourly integrated Load plus three percent of hourly integrated generation.”

Attachment A illustrates one possible way to account for and calculate the amount of generation upon which the Contingency Reserve amount is predicated.

Below is a practical illustration showing how the generation amount may be calculated under Requirement R1 for Balancing Authorities (BA) and Reserve Sharing Groups (RSG).

BA1 / RSG 1	Generation	Part of Generator
Generator 1	300 MWs online	Yes
Generator 2	200 MWs online	Yes
Generator 3 (Pseudo-Tied out to BA2)	100 MWs online	No
Generator 4 QF (has backup contract)	10 MWs online	No
Generator 5 QF in EMS	10 MWs online	Yes
Generator 6	0 MWs online	Yes
<u>Dynamic Schedule to BA2 from BA1¹</u>	<u>(50 MWs)</u>	
Generation	620 MWs	(The sum of gen 1–6)
BA generation (EMS)	510 MWs	(The sum of gen 1, 2, and 5)
Generation to use Under BAL-002-WECC-1	460 MWs**	(The sum of gen 1, 2, and 5 minus Dynamic Schedule)

** Assumes BA1 and BA2 agree on Dynamic Schedule treatment. If no agreement, BA1 would maintain reserves based on 510 MWs Generation.

BA2 / RSG2	Generation	Part of Generator
Generator 11	100 MWs	Yes
Generator 12	100 MWs	Yes
Generator 3 (Pseudo-Tied in from BA1)	100 MWs	Yes
<u>Dynamic Schedule from BA1 to BA2</u>	<u>50 MWs</u>	<u>Yes</u>
Generation	300 MWs	(The sum of gen 11, 12 and 3.)
BA generation (EMS)	300 MWs	(The sum of gen 11, 12 and 3)

¹ Note: This Dynamic Schedule is not the same as the Generator 3 Pseudo-Tie.

Generation to use Under BAL-002-WECC-1 350 MWs** (The sum of gen 11, 12 and 3 plus Dynamic Schedule)

** Assumes BA1 and BA2 agree on Dynamic Schedule treatment. If no agreement, BA1 would have to maintain reserves based on 510MWs Generation and BA2 would determine its generation to be 300 MWs.

Guideline and Technical Basis

A Guidance Document addressing implementation of this standard was filed with Version 2.



WECC-0142 BAL-002-WECC-3

Contingency Reserve

Request to Retire

WECC-0142 Drafting Team

01/21/2025

Executive Summary

This document supports and requests full retirement of WECC Regional Reliability Standard (RRS) BAL-002-WECC-3, Contingency Reserve.

In FERC Order No. 672, when considering approval of RRSs, FERC agreed to accept two kinds of regional differences: (1) a regional difference that is more stringent than the continent-wide Reliability Standard, including a regional difference that addresses matters that the continent-wide Reliability Standard does not; and (2) an RRS that is necessitated by a physical difference in the Bulk-Power System.¹

Order 672 also provides authority to retire an RRS.

Since the start of BAL-002-WECC-3 and its predecessors (2007), the original standard and each subsequent iteration have continued as more stringent than the continent-wide equivalent, NERC BAL-002-X, Disturbance Control Standard. Among other things, WECC's BAL-002-WECC has always required most WECC entities to hold more reserves than the continent-wide equivalent. Specifically, BAL-002-WECC-3, Requirement R1.1.1 requires the applicable entity to hold the greater of, either the amount of Contingency Reserve equal to the loss of the most severe single contingency or the amount of Contingency Reserve equal to the sum of 3% of hourly integrated load and 3% of hourly integrated generation.

Though Requirement R1.1.1 was approved in BAL-002-WECC-1, that approval was predicated on distributing burden and the availability of deliverability.² There has never been a technical study proving that holding reserves more than required under NERC BAL-002-X enhances the reliability of the Western Interconnection.

By contrast, as variable generation is added to the Interconnection, there is increasing evidence that holding excess reserves may be inhibiting reliability across the interconnection. FERC's recent Order 901 echoes these concerns, addressing operational and performance concerns for variable resources.

Restated, within the Western Interconnection, applicable entities are holding more reserves than the rest of the continent, even though there is no technical basis for doing so. In FERC Order 693, in which NERC BAL-002-1 was first approved, at P341, FERC states:

341. We believe a continent-wide contingency reserves policy would assure [sic] that there are adequate magnitude and frequency responsive contingency reserves in each Balancing

¹ Order No. 672 at P 331. See also FERC Order 740, P 4 and P 23.

[https://www.nerc.com/pa/Stand/Resources/Documents/FERC'S Criteria for Approving Reliability Standards from Order 672.pdf](https://www.nerc.com/pa/Stand/Resources/Documents/FERC'S%20Criteria%20for%20Approving%20Reliability%20Standards%20from%20Order%20672.pdf)

² FERC Order 740, Remand.



WECC-0142 BAL-002-WECC-3—Contingency Reserve—Request to Retire

Authority. This will improve performance so that no Balancing Authority will be doing *less than its fair share.*" (Emphasis added.)

By extension, retiring BAL-002-WECC-3 in favor of NERC BAL-002-3, ensures that no Balancing Authority will be doing **more** than its fair share.

Further, requiring Balancing Authorities to hold that excess may be inhibiting the integration and use of variable generation. As a result, BAL-002-WECC-3 creates a mandated scenario in which reserves are used inefficiently and withheld from the marketplace.



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Introduction

Per the Standard Authorization Request (SAR) for WECC-0142,³ this document explores the full retirement of WECC RRS BAL-002-WECC-3, Contingency Reserve.

The following will show that, if the standard is retired, reliability will continue to be maintained through NERC BAL-002-3, and may be enhanced as resources being held for contingency reserves may be used more efficiently to support variable generation.

By retiring BAL-002-WECC-3 in favor of NERC BAL-002-3:

- Dispatchable resources can be used to support variable generation, addressing issues raised by FERC in Order 901.
- A more efficient use of resources should negate any current negative impacts on the market, thereby enhancing vital public interests.

As the Procedural History and Development History sections note, BAL-002-WECC-3 is an evolution of pre-standards originating in the 1990s. Never during the estimated 30 years of its existence has there been a technical justification for the values and procedures required in the standard. Rather, the stated values and procedures are the result of generalized negotiations taking place between the parties. Because these values and procedures are negotiated, the content of BAL-002-WECC-3 is the lowest common denominator and does not meet the requirements of FERC Order 672.⁴

Because BAL-002-WECC-2a, Contingency Reserve, Request to Retire Requirement R2 provided the technical support for retiring Requirement R2, arguments in that filing are not revisited here.⁵

³ See WECC-0142 BAL-002-WECC-3, Contingency Reserve, Request to Retire, home page, at the SAR accordion.

⁴ FERC Order 672, P329 and P330.

⁵ Approved by the NERC Board of Trustees on August 15, 2019, filed with FERC on September 9, 2019.



Standard of Review

While the Commission may approve an RRS that is more stringent than a parallel continent-wide standard, the Commission may also retire such a standard.⁶

“While a Regional Entity may propose regional Reliability Standards that address specific, unique regional conditions and circumstances, *such regional Reliability Standards can be retired if those justifications are no longer relevant*. Accordingly, the Commission may approve retirement of a more stringent regional requirement “if the Regional Entity demonstrates that the continent-wide Reliability Standard is sufficient to ensure the reliability of that region.”⁷ (Emphasis added.)

In doing so, the Commission must give due weight to the technical expertise of a Regional Entity, like WECC, that is organized on an interconnection-wide basis with respect to the regional differences applicable to the Western Interconnection.

The technical qualifications of the subject matter experts compiling this paper are provided with this filing, as presented and approved by the WECC Standards Committee (WSC).

⁶ 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. 16 U.S.C. § 824o(d)(2) and 18 C.F.R. § 39.5(a). (See also) Additionally, 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 is,
- (2) necessitated by a physical difference in the Bulk-Power System.

⁷ Version One Regional Reliability Standard for Resource and Demand Balancing, Order No. 740, 75 FR 65964 (Oct. 27, 2010), 133 FERC ¶ 61,063, P 30 (2010). See also: FERC, 18 CFR Part 40, Docket No. RM19-20-000, WECC Regional Reliability Standard BAL-002-WECC-3 (Contingency Reserve), p.5



Procedural History

In 1996, the Western Systems Coordinating Council (WSCC)⁸ adopted the WSCC Reliability Criteria, Minimum Operating Reliability Criteria (MORC). The MORC prescribed levels of reserves that became BAL-002-WECC-3, effective 2021.

In 1999, the MORC became the WECC Reliability Management System (RMS), a contract-based system of accountability that pre-dated mandatory standards.

As the industry approached the onset of mandatory standards (2007) and memorialization of legacy operating practices, the content of the RMS was adapted and approved as BAL-STD-002-0, Operating Reserves (2007). That standard was an attempt to translate the substantive content of the RMS into the sought-after NERC/FERC format of today's reliability standards. The *content* was accepted "as is" with its origins in the 1996 MORC; albeit, the early standard was remanded for remediation, largely on *format* and structural grounds.

In 2013, FERC accepted remediations to BAL-002-WECC-2.

In 2017, an interpretation was added (BAL-002-WECC-2a) and later incorporated into BAL-002-WECC-3, in which Requirement R2 was approved for retirement, with an effective date of August 15, 2019.

In 2025, the Western Interconnection still adheres to similar levels of reserves as it did in 1996. This means that, for over 28 years, the Western Interconnection has held more reserves than the rest of the continent (NERC BAL-002-3) even though there has never been technical justification to do so.

⁸ The Western Systems Coordinating Council (WSCC) was formed in 1967 by 40 power systems to coordinate the planning and operations of the electric system in western North America. The WSCC's goal was to provide reliable power to the public.



Development History (Before 1996 to 2024)

Before 1996, members of the WSCC voluntarily operated the Western Interconnection according to the MORC.⁹ Although the MORC contained provisions for generation control, generation performance, and Contingency Reserve, the MORC provided no technical support for the reserve thresholds and characteristics it set.¹⁰ Rather, the operating thresholds were established by negotiation—not technical analysis. If this approach were adopted today, FERC would likely deny approval of the standard as contrary to FERC Order 672, P329.¹¹

In July and August of 1996, the Western Interconnection experienced two widespread outages resulting from improper vegetation management. The resulting outage reports^{12 13} made several recommendations that would later be adopted in the 1999 WECC RMS.^{14 15} The WECC Operating Committee’s recommendation produced portions of the RMS that later evolved into WECC Standard BAL-STD-002-0, Operating Reserves and, ultimately, BAL-002-WECC-3. Like the other initial

⁹ MORC, Maintenance Coordination: 1. Sharing information. The security and reliability of the interconnected power system depends upon periodic inspection and adequate maintenance of generators, transmission lines and associated equipment, control equipment, communication equipment, relaying equipment, and other system facilities. Entities and coordinated groups of entities must establish procedures and responsibility for disseminating information on scheduled outages and for coordinating scheduled outages of major facilities which affect the security and reliability of the interconnected power system.

¹⁰ Minimum Operating Reliability Criterion, Section 1, Generation Control and Performance

¹¹ FERC Order 672, P329. 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.

¹² The outage reports are available upon request. Western Systems Coordinating Council (WSCC) Disturbance Report for the Power System Outage that Occurred on the Western Interconnection August 10, 1996, as approved by the WSCC Operations Committee on October 18, 1996

¹³ “f. The WSCC Operations Committee shall assess whether the levels and allocation of operating reserves contributed to the severity of this disturbance and implement corrective measures as appropriate.” Western System Coordinating Council Disturbance Report, For the Power System Outages that Occurred on the Western Interconnection on 2 JUL 1996. Approved by the WSCC Operations Committee on September 19, 1996. RMS Outage Report, page 14.

¹⁴ The RMS was approved 1 SEP 1999. WECC Comment Report – WECC Tier 1- RMS Standard – (BAL-STD-002-0) Question 4, Attachment 2, page 9.

¹⁵ “The majority of these standards were specifically developed to address and mitigate main causes of the two major system outages that occurred in the Western Interconnection in July and August of 1996.” Agenda Item 3, Board of Trustees Meeting, March 12, 2007, page 4



standards, the language of the original standard was a translation of the language contained in the RMS.¹⁶

In March 1997, noting that federal remedial legislation could take years to enact, the WSCC trustees created the WSCC RMS Policy Group¹⁷ establishing a contract-based operational system known as the RMS.^{18 19} In establishing the RMS, the WSCC RMS Policy Group reviewed all NERC and WECC reliability criteria, identified specific criteria deemed critical for reliability management, then moved those criteria into the RMS through a three-phase implementation plan.²⁰

On April 14, 1999, FERC asserted jurisdiction over the RMS.

Between September 1998 and February 2000 (phase two of the three-phase RMS implementation), the WSCC turned the content of the RMS into the first mandatory reliability standards (aka Version Zero, 2007). BAL-SDT-002-0, Contingency Reserve was part of that translation.

On December 22, 2006, WECC submitted a request to NERC to approve, and send to FERC for approval, eight proposed RRSs. WECC referred to the eight proposed standards as its Tier One

¹⁶ WECC states that the proposed regional Reliability Standards, which are exact translations of existing regional criteria, either address matters not addressed in the Commission-approved ERO Reliability Standards or contain more stringent requirements than the ERO standards. (FERC accepted Tier One standards evolving from the RMS. AKA: Tier One Order.) FERC, 119 FERC ¶ 61,260 United States of America, Federal Energy Regulatory Commission, Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications (Issued June 8, 2007), page 19.

¹⁷ Following the enactment of EPAct 2005 and the establishment of mandatory Reliability Standards applicable to all owners, operators, and users of the BPS, WECC sought to translate certain of its existing practices under its RMS reliability criteria into regional Reliability Standards to supplement the continent-wide Reliability Standards the Commission approved in Order No. 693. To that end, WECC established a task force to identify criteria in the RMS that should be binding on all BPS users, owners, and operators in the Western Interconnection, not just the Transmission Operators subject to the RMS. The task force chose eight of the identified criteria, which had the highest priority and could be implemented in the near term for translation into regional Reliability Standards. United States of America Before the Federal Energy Regulatory Commission, North American Electric Reliability Corporation (NERC), Docket No. RM16-10-000, Supplemental Information for Petition of the NERC and WECC for Approval of retirement of Regional Reliability Standard TOP-007-WECC-1a, page 5.

¹⁸ Hearing

¹⁹ Electric Reliability Corporation, Helping Owners, Operators, and Users of the Bulk Power System Assure Reliability and Security for More Than 50 Years, By David Nevius, Senior Vice President 1979–2012, Page 40-41.

²⁰ Hearing



standards originating from the RMS because the proposed standards were translations of standards that were already mandatory within the Western Interconnection as part of the RMS.²¹

Those eight standards—that included Tier One WECC-BAL-STD-002-0 (Operating Reserves)—were near-exact translations of existing WECC criteria that FERC earlier accepted as part of the WECC RMS program.²² Because the content was a near-exact translation, the format did not match that required by NERC/FERC. This would later lead to a remand of BAL-002-WECC-1 to ensure conformity.

On January 9, 2007, NERC provided WECC with a report of its preliminary findings about the request from December 22, 2006, and provided WECC with a list of required remediations.²³ The request largely addressed styles, formats, and corrections to compliance sections. The NERC Board of Trustees approved the Tier One request subject to remediation and sent the eight proposed standards to FERC with a request for approval.

In June 2007, FERC approved WECC's submittal of eight reliability-crucial Tier One standards, thereby transitioning from the RMS system to that of FERC-approved NERC Reliability Standards.²⁴ Although earlier versions lacked technical support, FERC agreed with

“WECC, WIRAB [Western Interconnection Regional Advisory Board] and NERC that approval of [WECC's early BAL] under section 215 would enhance reliability in the Western Interconnection **by making WECC's current practices binding** on all relevant entities in the region and **by strengthening WECC's compliance and enforcement authority.**”²⁵

²¹ North American Electric Reliability Corporation, Docket No. RR07-___-000, III. BACKGROUND ON THE DEVELOPMENT OF THE WECC REGIONAL RELIABILITY STANDARDS, Debra A. Palmer of Schiff/Hardin (1666 K STREET N.W., SUITE 300, WASHINGTON, DC 20006) on March 26, 2007.

²² Loc. Cit. IV. Overview of the Proposed WECC Regional Reliability Standards, page 6.

²³ NERC DECISION APPROVING, WITH CONDITIONS, RELIABILITY STANDARDS PROPOSED BY WESTERN ELECTRICITY COORDINATING COUNCIL, page 2. (Approved by Board of Trustees March 12, 2007)

²⁴FERC Order Approving Regional Reliability Standards for the Western Interconnection and Directing Modifications, Docket No. RR07-11-000, (Issued June 8, 2007)

²⁵ Tier One Order, p. 43. See also, “The proposed regional Reliability Standards would make eight of those RMS criteria binding on the applicable subset of users, owners and operators of the Bulk-Power System in the United States portion of the Western Interconnection, as identified in each proposed standard. The regional Reliability Standards would supplement rather than replace the Commission-approved Reliability Standards developed by the ERO that will take effect in June 2007. Tier One, p. 10.



Structural Overview of BAL-002-WECC-3

Purpose

The Purpose of currently effective RRS BAL-002-WECC-3—Contingency Reserve is to provide an RRS specifying “the quantity and types of Contingency Reserve required to ensure reliability under normal and abnormal conditions.”²⁶

The NERC Glossary defines Contingency Reserve as:

“The provision of capacity that may be deployed by the Balancing Authority to respond to a Balancing Contingency Event and other contingency requirements (such as Energy Emergency Alerts as specified in the associated EOP standard). A Balancing Authority may include in its restoration of Contingency Reserve readiness to reduce Firm Demand and include it if, and only if, the Balancing Authority:

- is experiencing a Reliability Coordinator declared Energy Emergency Alert level and is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan.
- is utilizing its Contingency Reserve to mitigate an operating emergency in accordance with its emergency Operating Plan.”

Applicability

BAL-002-WECC-3 applies to Balancing Authorities (BA), unless the BA is a member of a Reserve Sharing Group (RSG), in which case the RSG becomes the applicable entity.

Requirements

The standard consists of four requirements.

Requirement R1

- Provides that each BA and RSG must maintain a minimum amount of Contingency Reserve, except within the first sixty minutes following an event requiring the activation of Contingency Reserves, and that the Contingency Reserve must consist of any combination of a list of specified reserve types.

Requirement R2

- Reserved. Retired, subject to cyclical field tests.

²⁶ BAL-002-WECC-3, Contingency Reserve, Purpose.



Requirement R3

- Each Sink BA and RSG must maintain an amount of Operating Reserve, in addition to the minimum Contingency Reserve in Requirement R1, equal to the amount of Operating Reserve–Supplemental for any Interchange Transaction designated as part of the Source Balancing Authority’s Operating Reserve–Supplemental or source Reserve Sharing Group’s Operating Reserve–Supplemental, except within the first sixty minutes following an event requiring the activation of Contingency Reserve.

Requirement R4

- Each Source BA and RSG must maintain an amount of Operating Reserve, in addition to the minimum Contingency Reserve amounts identified in Requirement R1, equal to the amount and type of Operating Reserves for any Operating Reserve transactions for which it is the Source BA or RSG.



Reliability will be Maintained

Upon retirement of BAL-002-WECC-3, reliability will be maintained by NERC BAL-002-3, Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing Contingency Event, reinforced by the enhanced availability of resources currently unavailable under BAL-002-WECC-3.

Replacing BAL-002-WECC-3 with NERC BAL-002-3 Mitigates Reliability Gaps associated with Variable Generation

As highlighted by FERC in its Order 901, with the growing amount of variable generation replacing more responsive and dispatchable resources, the industry faces the dilemma of how to support these new resources.²⁷ Unlike traditional resources, much of the new variable generation cannot be quickly dispatched, thus creating a gap in reliability. FERC acknowledged that gap, noting that neither business as usual nor existing reliability standards will remedy this concern. Finally, FERC also recognizes the value that steps taken must apply on a continent-wide basis.²⁸

Replacing BAL-002-WECC-3 with the continent-wide NERC BAL-002-3 takes immediate steps towards meeting FERC's concerns.

In Order 901, FERC states:

“[W]e continue to find that as the resource mix trends towards higher penetrations of IBRs, the need to reliably integrate these resources into the Bulk-Power System is expected to grow, and that the currently effective Reliability Standards do not adequately address IBR reliability risks. *The continuing risks that the increasing penetration of IBRs pose to the reliable operation of the Bulk-Power System underscore the need for mandatory Reliability Standards to address these issues on a nationwide basis.*” (Emphasis added.) Order 901, P24.

When BAL-002-WECC-3 is retired and replaced with NERC BAL-002-3, the amount and type of reserves required to be held back within the Western Interconnection will decrease. That frees those resources to be plied against load. Within the Western Interconnection, a vast majority of these sequestered resources are immediately dispatchable (such as hydro), thus serving as the perfect resource to match the less predictable response of variable generation.

²⁷ FERC Order 901, P11-15, 185 FERC ¶ 61,042, United States of America, Federal Energy Regulatory Commission (FERC), 18 CFR Part 40, Docket No. RM22-12-000; Reliability Standards to Address Inverter-Based Resources, October 19, 2023. Hereafter: Order 901

²⁸ Order 901, P24.



By making these dispatchable resources more operationally available, the secondary benefits may be to bolster the supply of generation to the market. This potential secondary benefit directly addresses vital public interests.²⁹

Dispatchable Resources Contribute Significantly to Essential Reliability Services (ERS) ³⁰

ERSs consist of frequency control, ramping capability, and voltage control.

Frequency control is necessary because the electric grid is designed to operate at a frequency of 60 hertz (Hz). Deviations from 60 Hz can have destructive effects on generators, motors, and equipment of all sizes and types. It is critical to maintain and restore frequency after a disturbance such as the loss of generation. This requires an instantaneous (inertial) response from some resources and a fast response from other resources to slow the rate of fall during the arresting period, a fast increase in power output during the rebound period to stabilize the frequency, and a more prolonged contribution of additional power to compensate for lost resources and bring system frequency back to the normal level. Two NERC Reliability Standards address this:

- BAL-002-3 Disturbance Control Standard—Contingency Reserve from a Balancing Contingency Event
- BAL-003-2 Frequency Response and Frequency Bias Setting

Adequate ramping capability (the ability to match load and generation at all times) is necessary to maintain system frequency. Changes to the generation mix or the system operator's ability to adjust resource output can impact the ability of the operator to keep the system in balance. NERC Reliability Standard BAL-001-2 (Real Power Balancing Control Performance) addresses this issue.

Voltage must be controlled to protect system reliability and move power where it is needed in both normal operations and following a disturbance. Voltage issues tend to be local in nature, such as in sub-areas of the transmission and distribution systems. Reactive power is needed to keep electricity flowing and maintain necessary voltage levels. Several NERC Reliability Standards address voltage control.

Restated, replacing BAL-002-WECC-3 with NERC BAL-002-3 frees dispatchable resources to address FERC-identified reliability gaps created by variable generation, and may bolster vital public interests.

²⁹ "335. 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." (Emphasis added.) Order 693, P35.

³⁰ "Essential Reliability Services (ERS) are the elemental 'reliability building blocks' from resources (generation and demand) necessary to maintain Bulk Power System (BPS) reliability." NERC ERS Task Force – Scope – 2014.

Because adequate levels of reserves are established in NERC BAL-002-3, and supported by BAL-003-2, BAL-002-WECC-3, Requirements R1 through R4 are not needed.

Replacing BAL-002-WECC-3 With NERC BAL-002-3 Provides Sufficient Reserves at a Continent-Wide Level

In the earliest stages of the Western Interconnection's strides to establish adequate Contingency Reserves, the applicable entity's reserves were established by BAL-STD-002-0, Operating Reserves, at 5% of hydro generation and 7% thermal generation (50% spinning and 50% non-spinning).³¹ These thresholds were not technically supported; they were the result of contractual negotiations. Today, such a standard would likely not be approved by FERC as violative of the principles established in FERC Order 672. (See foot note 2.)

As BAL-STD-0-2 was replaced with later iterations of that standard, the result was today's BAL-002-WECC-3, in which the Responsible Entity's reserves are set at:

R1.1.1 "The greater of either:

- The amount of Contingency Reserve equal to the loss of the most severe single contingency;³² (or)
- The amount of Contingency Reserve equal to the sum of three percent of hourly integrated Load plus three percent of hourly integrated generation."

Bullet one of BAL-002-WECC-3 describes the Most Severe Single Contingency, or MSSC.

The MSSC ensures that all entities can recover Area Control Error (ACE) within 15 minutes. The MSSC serves as the upper Contingency Reserve threshold for all interconnections, except the Western Interconnection. Within the Western Interconnection, the levels of reserve set by BAL-002-WECC-3 can exceed that of the rest of the continent that is protected by FERC-approved BAL-002-3. As a result, the Western Interconnection carries an excess of reserve that exacerbates concerns raised by FERC in Order 901 wherein FERC addresses the need for continent-wide standards to backstop the operational performance of variable generation. Comparing NERC BAL-002-3 with BAL-002-WECC-3 illustrates this outcome.

NERC BAL-002-3 states that the BA and the RSG are not subject to compliance with BAL-002-3, R1 for multiple events that exceed the MSSC. NERC BAL-002-3 requires the applicable entity to deploy Contingency Reserve *up to its MSSC*; however, it does not require Contingency Reserve deployment *beyond MSSC*.

³¹ See Attachment - Transition from 5-7 to 3-3, as described in 2005 by Merrill Schultz; see also Attachment - History of WECC Reserve 5-7 Spin Merrill Schultz, March 3, 2005; see also BAL-STD-002-0, Operating Reserves.

³² Also known as the Most Severe Single Contingency (MSSC).



By contrast, BAL-002-WECC-3 requires the applicable entity to maintain a level of Contingency Reserves *exceeding that required under NERC BAL-002-3*, as approved by FERC. Specifically, BAL-002-WECC-3, Requirement R1 requires the applicable entity to carry reserves that equal or exceed the entity's MSSC—beyond that required by BAL-002-3 that adequately serves the balance of the continent. Among other things, this means these valuable dispatchable resources in excess of the MSSC cannot be used to meet FERC's goal of backstopping variable resources as identified in FERC Order 901.

While the application of BAL-002-3 could free resources to enhance reliability, the application of BAL-002-WECC-3 can inhibit reliability when resources are withheld that could otherwise serve load and backstop variable resources.

For example:

Using historical data from January 2020 - May 2024, comparison of the hourly Contingency Reserve Requirement (calculated using 3% generation and 3% load) to the Most Severe Single Contingency (MSSC), the results identified there was more than 5,000 MW of capacity available during the summertime peak hours and between 2,000-2,500 MW during the remaining hours of the year. See figure below.



Figure 1: Reserves in excess of MSSC

The Shortened Execution Time of BAL-002-WECC-3 Inhibits Reliability Due to Market Rules in the Western Interconnection

BAL-002-WECC-3, Requirements R3 and R4 require the applicable entity to restore Contingency Reserve within 60 minutes of the initiating event. By contrast, BAL-002-3 requires the applicable entity to achieve the same task in 105 minutes. As a result, BAL-002-WECC-3 requires the performance of the same task 45 minutes earlier than its continent-wide counterpart. This shortened period inhibits reliability in that it forces the applicable entities into transactions agreed upon during an arbitrarily shortened time window. Like BAL-002-3, Requirement R1., there is no technical support suggesting

that rushing this transaction enhances reliability —yet it remains in force 28 years after its inception, still lacking any technical support.

Further, the restoration of reserves in a 60-minute timeframe is restrictive on the entity's ability to secure additional resources within the established business practices in the region. The NERC Standard of up to 105 minutes (90 minutes after the 15 minutes Contingency Recovery Period) after the event has less commercial impact and is acceptable from both a commercial standpoint as well as an operational standpoint.

The WECC requirement of 60 minutes from start of a DCS event restricts the deficient entity from rescheduling resources to replace those that were lost during the event. Western market practices require schedules to be submitted and approved well in advance to ensure reliability, and once the schedule windows close, it is difficult to make last-minute changes. Before markets, when transactions were bilateral, a recovery of generation resources was more flexible, and could be more quickly executed.

The NERC BAL-002-3 Contingency Reserve Restoration Period of up to 105 minutes allows applicable entities to use normal market scheduling practices to replace lost generation. FERC's approval of NERC BAL-002-3 shows its belief that the NERC standard of 105 minutes (90 plus 15) is adequate and does not degrade reliability.

In attempting to meet the 60-minute restoration requirement, the applicable entity has two options.

First, the BA must carry significantly more Contingency Reserve than is required to maintain an adequate level of reliability, or second, be prepared to enter an Energy Emergency Alert 3 which allows the BA to deploy Contingency Reserves to serve load. By definition, entering into an Energy Emergency Alert is an indication of reduced reliability. Given normal scheduling practices, a 90-minute restoration time allows a Responsible Entity to restore Contingency Reserve using normal established market scheduling practices.

In addition, many entities own BES equipment in more than one interconnection. Having a single standard enhances these entities' ability to stay in compliance with the standard using consistent business practices across the interconnections.

Reserve Thresholds do Not Reflect Resource Mix

Due to the changing resource mix and the proliferation of renewable generation, battery storage, and retirements of conventional synchronous generation, resource adequacy has become a serious concern. The BAL-002-WECC standard unnecessarily ties up significant generation which is dispatchable, frequency responsive and fast ramping. Generation that could be used to meet ramps, follow variable resources, or simply meet expected loads, is committed to contingency reserve capacity that is not available to serve load. For example, Western Power Pool's Northwest Power Pool Reserve Sharing Group Northwest-Montana zone typically has a 1,200 MW MSSC, yet routinely has over 3,000 MW of



reserves being held under the 3/3 requirement. That available capacity, usually in excess 1,800 MW, could be used to meet other reliability related services obligations. The existing 3/3 contingency reserve requirement results in the construction of at least 1800 MW of excess generation in the Northwest-Montana zone. The ability to use this generation capacity exceeding the MSSC will also allow entities to efficiently operate their facilities. Idled excess capacity will be reduced and productive generation increased.

Under NERC standard NERC BAL-002-3, the Eastern, Texas and Quebec Interconnections operate without the additional reserve requirement (3% load and 3% generation), and they are allowed to restore their reserves within 90 minutes. The changing market structure in the Western Interconnection has made it difficult to fully restore the required reserves within 60 minutes due to market scheduling timelines. This can lead to implementation of emergency procedures, typically Energy Emergency Alert 3 conditions, due to an energy shortfall precipitated by the 60-minute recovery period. When the Western markets were mostly bilateral, the 60-minute recovery was consistent with energy scheduling protocols. Market integration has altered energy scheduling protocols making it very difficult to modify schedules within 60 minutes of a generation contingency. For these reasons BAL-002-WECC-3 has become obsolete, while not enhancing reliability.

Reserves are unused or unloaded generation that are in a state of readiness in case there is sudden loss of loaded generation. When reserves are held above the MSSC, as they are in the Western Interconnection, excess capacity must be built that has no other reliability benefit. Every energy customer in the West absorbs this excess cost. Retirement of BAL-002-WECC-3 reallocates these excess resources to the benefit of the interconnection in the form of dispatchable, responsive, and available resources to reliably integrate future variable resources, such as wind, solar, and other renewable resources.

Vital Public Interests will be Enhanced^{33 34}

Market Timing Issues

The emergence of organized markets in WECC, since the inception of BAL-002-WECC-1 has brought a new dynamic in the timing and means by which the reserves are procured. The number of participants in the California ISO Energy Imbalance Market (AKA: Western Energy Imbalance Market, or WEIM)

³³ “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.” FERC Order No. 672 at P 335.

³⁴ “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.” FERC Order No. 672 at P 328.



has grown significantly in the past several years. CAISO EIM market rules require a participating BA to balance its resources and loads 75 minutes before the next operating hour (T-75). Failure to do this can result in financial penalties to the participating BA. This rule has had the effect of discouraging any bilateral energy trading after T-75 and does not align well with a 60-minute reserve recovery time limit. No bilateral trading for replacement energy reserve is possible for the next operational hour because participating WEIM BAs cannot participate in trades within T-75.

This leaves the contingent BA in a resource short position when the 60-minute contingency restoration time expires. At this point, the contingent BA must activate emergency operating procedures up to asking the Reliability Coordinator to declare an EEA3, including load shedding to balance the contingent BA. By extending the contingency restoration time to 105 minutes (15-minute recovery plus 90-minute restoration), the contingent BA has at least 30 minutes to arrange replacement energy in a bilateral manner from other BAs or schedule their own resource in the WEIM. The additional contingency reserve recovery time allows the contingent BA to make orderly and planned adjustments and continue to serve firm load without the implementation of emergency operating procedures, up to and including shedding firm load.

FERC and the industry have determined that 90 minutes from the end of the recovery period (up to 15 minutes) is sufficient to maintain an adequate level of reliability. The shorter restoration period in the WECC creates artificial reliability issues as the applicable entity tries to rebalance supply and demand in an arbitrarily shorter period than that required in the NERC BAL-002-3.

To give a clear understanding of the impact of either option, the following example is provided.

Assume the NWPP RSG's MSSC is approximately 1,200 MW. Under BAL-002-WECC-3, the NWPP RSG would normally carry approximately 2,200-4,000 MW of Contingency Reserves depending on the time of year. Assuming the MSSC occurs, the NWPP RSG would activate 1,200 MW of its reserves and restore the ACE to the pre-event level. Members now have approximately 60 minutes to restore 1,200 MW of reserves while still carrying more than 1,000-2,800 MW, which is greater than the MSSC, assuming it was not reduced with the loss of the 1,180 MW event. See figure below.

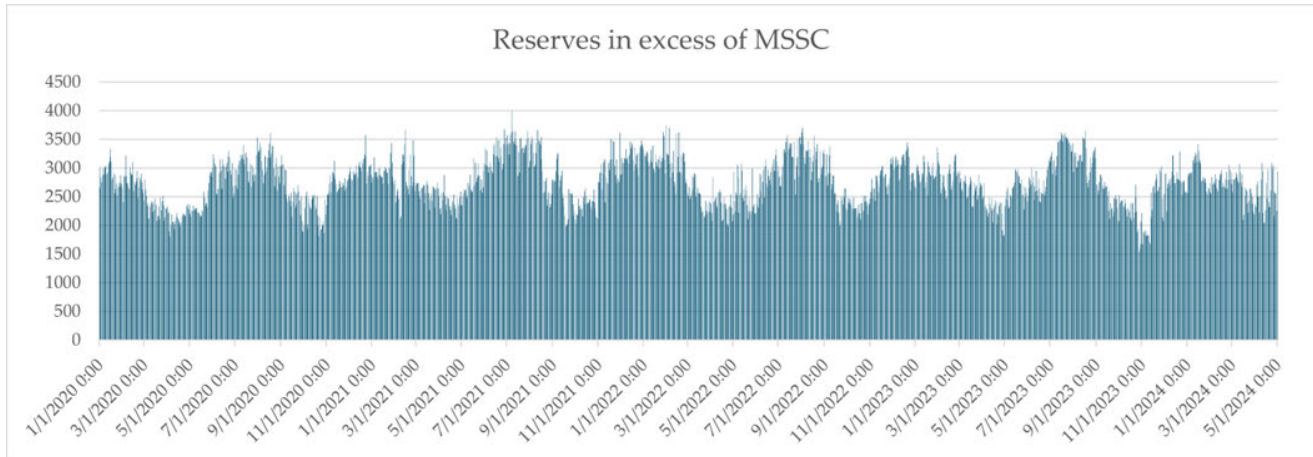


Figure 2: Reserves in excess of MSSC; January 1, 2020, through May 1, 2024

As discussed earlier, due to market rules related to the WEIM in which most entities are taking part, new resources cannot be added to an entity's reserves for the next hour (minimum time to add a resource under the WEIM (75 minutes), or other emerging markets. If a resource is not already in the WEIM, it cannot count toward the reserves needed. So, an entity must have already been carrying reserves greater than required under the WECC standard, or it must reduce load to balance its resources and loads including reserves. (It can be argued that by reducing loads, you are putting the interconnection at greater risk because you have removed one available resource, the load, from being an option for the next event.) To avoid the declaration of an EEA, the NWPP would need to carry an additional 1,000 MW above the required reserves or declare an EEA any time the reserves need to be restored within 60 minutes of the event.

When entities withhold extra reserves to avoid the EEA, this paradigm keeps 2,500 to 4,000 MW from serving load due to the WECC current standard, which has no technical merit, as compared to the NERC Standard. These additional resources could be used to help integrate more inverter-based resources and serve loads more efficiently if it were available for load service.

Entering an Energy Emergency Alert indicates reduced reliability. Given normal scheduling practices, which require bilateral schedules to be completed and approved 75 minutes before the hour, a 60-minute restoration time does not allow adequate time for a Responsible Entity to restore Contingency Reserve in less than 60 minutes from the initiating event, potentially resulting in an Energy Emergency Alert situation.

Capacity Could be Better Used than Simply Holding Reserve

FERC and the industry have determined that the amount of Contingency Reserve needed to maintain an adequate level of reliability is the amount of Contingency Reserve needed to replace the MSSC resource. Holding Contingency Reserve more than MSSC precludes using operating reserve for other purposes, particularly load and resource balancing in real-time. As the grid transitions from

conventional synchronous generation to more variable renewable resources, increasing capacity will be needed to manage the variability and faster ramping requirement of these resources. Allocating reserves in excess of that needed to maintain an adequate level of reliability, or MSSC, ultimately detracts from reliability.

Conclusion

Retirement of BAL-002-WECC-3 Contingency Reserve would reduce required reserves in WECC without diminishing the ability to meet the deployment requirement. Freeing up reserves from the Contingency Reserve requirement would increase the resources available to manage variable resources and accommodate increased renewable resource integration.

The existing BAL-002-WECC-3 Contingency Reserve sets a BA's or RSG's Contingency Reserve requirement to the greater of the MSSC or 3% of the applicable entity's generation and 3% of its load. This 3/3 requirement exceeds MSSC for most responsible entities.

By contrast, NERC Standard BAL-002-3 Disturbance Control Standard—Contingency Reserve for Recovery from a Balancing Contingency Event, Requirement R1.3.2 states that the BA/RSG is not subject to compliance with Requirement R1 for multiple events that exceed the MSSC. NERC BAL-002-3 requires the applicable entity to deploy Contingency Reserve up to the MSSC but does not require Contingency Reserve deployment beyond the MSSC.

In BAL-002-3, FERC and the industry have determined that the amount of Contingency Reserve needed to maintain an adequate level of reliability is the amount of Contingency Reserve needed to replace the MSSC resource.

Holding Contingency Reserve more than MSSC precludes using operating reserve for other purposes, particularly load and resource balancing in real time. As the grid transitions from conventional synchronous generation to more variable renewable resources, increasing capacity will be needed to manage the variability and faster ramping requirement of these resources. Allocating reserve in excess of that needed to maintain an adequate level of reliability, or MSSC, ultimately detracts from reliability.

BAL-002-WECC-3 requires an applicable entity to restore Contingency Reserve within 60 minutes of the initiating event (as opposed to up to 105 minutes in BAL-002-3), or 45 minutes sooner than required by BAL-002-3. With respect to impacts to the time to restore Contingency Reserve, FERC and the industry have determined that 90 minutes from the end of the recovery period (up to 15 minutes) is sufficient to maintain an adequate level of reliability. By contrast, the 60-minute requirement within BAL-002-WECC-3 creates potential reliability issues as an applicable entity tries to rebalance in an arbitrarily shorter period than that required in the NERC BAL-002-3. In attempting to meet the 60-minute restoration requirement, an applicable entity has two options. First, the BA must carry significantly more Contingency Reserve than is required to maintain an adequate level of reliability, or second, be prepared to enter an Energy Emergency Alert 3 and deploy Contingency Reserve to serve load. Given normal scheduling practices, a 90-minute restoration time allows an applicable entity to restore Contingency Reserve without employing emergency procedures.

Retirement of BAL-002-WECC-3 will enhance the reliable operation of the Western Interconnection by allowing resources that are presently used for overprotecting above the MSSC to be available to meet



the immediate balancing needs of the Interconnection. This will free those resources to be used as needed in a rapidly changing system to maintain overall reliability.



Attachment E – Project Roadmap

WECC-0142 BAL-002-WECC-3 Request to Retire

Project Roadmap

Actions		Completed
1.	Standard Authorization Request (SAR) Filed	August 14, 2020
2.	WECC Standards Committee (WSC) approved the SAR	October 22, 2020
3.	Drafting Team (DT) Solicitation	November 5, 2020
4.	WSC approves a Drafting Team	December 8, 2020
5.	DT Meeting	March 16, 2021
6.	DT Meeting (Subset)	March 31, 2021
7.	DT Meeting (Subset)	April 14, 2021
8.	DT Meeting	April 28, 2021
9.	DT Meeting	May 26, 2021
10.	DT Meeting	June 21, 2021
11.	DT Meeting	June 30, 2021
12.	DT Meeting	July 23, 2024
13.	DT Meeting	August 22, 2024
14.	DT Meeting	September 19, 2024
15.	DT Meeting	October 3, 2024
16.	DT Meeting	October 10, 2024
17.	DT Meeting	October 24, 2024

18.	DT Meeting	November 7, 2024
19.	Posting 1 Open	November 15, 2024
20.	Posting 1 Closed	January 15, 2025
21.	DT Meeting	January 21, 2025
22.	WSC Approved for Ballot	March 6, 2025
23.	Ballot Pool Open	April 14, 2025
24.	Ballot Pool Closed	April 28, 2025
25.	Standards Briefing Open Meeting	April 30, 2025
26.	Ballot Open	May 1, 2025
27.	Ballot Closed	May 15, 2025
28.	Passed Ballot Pool Approval	May 15, 2025
29.	WSC Approved for WECC Board of Directors (Board) Disposition	May 21, 2025
30.	WECC Board Approved for NERC/FERC Filing	June 11, 2025
31.	NERC 45-Day Comment – Open	TBD
32.	NERC 45-Day Comment – Closed	TBD
33.	DT Meeting	TBD
34.	NERC Board of Trustees Approved	TBD

Regional Reliability Standards Announcement

Western Electricity Coordinating Council (WECC) Proposed Retirement of BAL-002-WECC-3

Comment Period Open through October 30, 2025

[Now Available](#)

WECC requested that NERC post the proposed retirement of **BAL-002-WECC-3 – Contingency Reserve** for industry review and comment in accordance with the NERC Rules of Procedure. A 45-day comment period is open through **8 p.m. Eastern, Thursday, October 30, 2025**.

Background

WECC recommends the retirement of Regional Reliability Standard BAL-002-WECC-3 in its entirety for the reasons stated in the WECC-0142 BAL-002-WECC-3 Contingency Reserve Request to Retire white paper, available [here](#).

The retirement proposal was posted for comment by WECC November 15, 2024 - January 15, 2025 and the comments received can be viewed [here](#). The retirement was approved by the WECC Board of Directors on June 11, 2025.

For more information, see the documents posted on the [NERC Regional Standards Under Development](#) page. Additional materials can be found on the [WECC Standards](#) page.

Commenting

Use the [Standards Balloting and Commenting System \(SBS\)](#) to submit comments. Contact [Alexandria Myrick](#) regarding issues with the SBS. 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.

For more information or assistance, contact Reliability Standards Analyst, [Wendy Muller](#) (via email) or at (404) 823-1366.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

Unofficial Comment Form

Regional Reliability Standard – Retirement BAL-002-WECC-3

DO NOT use this form for submitting comments. Use the [electronic form](#) to submit comments on the proposed retirement of Regional Reliability Standard **BAL-002-WECC-3 – Contingency Reserve**. The electric form must be submitted by **8 p.m. Eastern, Thursday, October 30, 2025**.

If you have questions, contact Reliability Standards Analyst, [Wendy Muller](#) (via email) or at (404) 823-1366.

Background Information

WECC recommends the retirement of Regional Reliability Standard BAL-002-WECC-3 in its entirety. For more information, please see the documents posted on the [NERC Regional Standards Under Development](#) page. Additional materials can be found on the [WECC Standards](#) page.

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 Regional Reliability Standards Development Procedure for retiring Regional Reliability Standard BAL-002-WECC-3 was fair and open?

☐ Yes

☐ No

Comments:

2. Does the retirement of Regional Reliability Standard BAL-002-WECC-3 pose an adverse impact to reliability or commerce in a neighboring region or interconnection?

☐ Yes

☐ No

Comments:

3. Does the retirement of Regional Reliability Standard BAL-002-WECC-3 pose a serious and substantial threat to public health, safety, welfare, or national security?

☐ Yes

☐ No

Comments:

4. Does the retirement of Regional Reliability Standard BAL-002-WECC-3 pose a serious and substantial burden on competitive markets within the interconnection that is not necessary for reliability?

☐ Yes

☐ No

Comments:

5. Do you agree that Regional Reliability Standard BAL-002-WECC-3 is no longer needed to specify more stringent criteria than a continent-wide standard, address matters not included in a continent-wide standard, or address a physical difference in the bulk power system?

☐ Yes

☐ No

Comments:

Comment Report

Project Name: Regional Reliability Standard (WECC) | Retirement of BAL-002-WECC-3

Comment Period Start Date: 9/16/2025

Comment Period End Date: 10/30/2025

Associated Ballots:

There were 14 sets of responses, including comments from approximately 36 different people from approximately 16 companies representing 6 of the Industry Segments as shown in the table on the following pages.

Questions

- 1. Do you agree that the Regional Reliability Standards Development Procedure for retiring Regional Reliability Standard BAL-002-WECC-3 was fair and open?**
- 2. Does the retirement of Regional Reliability Standard BAL-002-WECC-3 pose an adverse impact to reliability or commerce in a neighboring region or interconnection?**
- 3. Does the retirement of Regional Reliability Standard BAL-002-WECC-3 pose a serious and substantial threat to public health, safety, welfare, or national security?**
- 4. Does the retirement of Regional Reliability Standard BAL-002-WECC-3 pose a serious and substantial burden on competitive markets within the interconnection that is not necessary for reliability?**
- 5. Do you agree that Regional Reliability Standard BAL-002-WECC-3 is no longer needed to specify more stringent criteria than a continent-wide standard, address matters not included in a continent-wide standard, or address 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
Southwest Power Pool, Inc. (RTO)	Alan Wahlstrom	2	MRO,WECC	SPP	Alan Wahlstrom	SPP	2	MRO
					Alan Wahlstrom	SPP	2	WECC
Tacoma Public Utilities (Tacoma, WA)	Jennie Wike	1,3,4,5,6	WECC	Tacoma Power	Jennie Wike	Tacoma Public Utilities	1,3,4,5,6	WECC
					John Merrell	Tacoma Public Utilities (Tacoma, WA)	1	WECC
					John Nierenberg	Tacoma Public Utilities (Tacoma, WA)	3	WECC
					Hien Ho	Tacoma Public Utilities (Tacoma, WA)	4	WECC
					Terry Gifford	Tacoma Public Utilities (Tacoma, WA)	6	WECC
					Ozan Ferrin	Tacoma Public Utilities (Tacoma, WA)	5	WECC
Black Hills Corporation	Rachel Schuldt	1,3,5,6		Black Hills Corporation - All Segments	Trevor Rombough	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

Sacramento Municipal Utility District	Tim Kelley	1,3,4,5,6	WECC	SMUD and BANC	Nicole Looney	Sacramento Municipal Utility District	3	WECC
					Charles Norton	Sacramento Municipal Utility District	6	WECC
					Wei Shao	Sacramento Municipal Utility District	1	WECC
					Foung Mua	Sacramento Municipal Utility District	4	WECC
					Nicole Goi	Sacramento Municipal Utility District	5	WECC
					Kevin Smith	Balancing Authority of Northern California	1	WECC

1. Do you agree that the Regional Reliability Standards Development Procedure for retiring Regional Reliability Standard BAL-002-WECC-3 was fair and open?

Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC, Group Name Tacoma Power

Answer Yes

Document Name

Comment

Tacoma Power concurs that the procedure was fair and open, and provided sufficient opportunity for entities to comment on the proposal. The white paper supporting the WECC Standard Project 0142 also provides sufficient documentation and transparency for retiring this regional Standard.

Likes 0

Dislikes 0

Response

Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC

Answer Yes

Document Name

Comment

SMUD agrees that the procedure was fair and open, providing ample opportunity for stakeholders to comment on the proposal. Additionally, the white paper supporting the WECC Standard Project 0142 offers sufficient documentation and transparency to support the retirement of this regional Standard.

Likes 0

Dislikes 0

Response

Jessica Cordero - Unisource - Tucson Electric Power Co. - 1

Answer Yes

Document Name

Comment

Likes 0

Dislikes 0

Response

Kevin Conway - Western Power Pool - 4	
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	
Casey Perry - TXNM Energy - 1,3 - WECC,Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
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	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Alan Wahlstrom - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC, Group Name SPP	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Justin Spear - Western Area Power Administration - 1,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Darcy O'Connell - California ISO - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Neville - Western Area Power Administration - 1,6	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	

2. Does the retirement of Regional Reliability Standard BAL-002-WECC-3 pose an adverse impact to reliability or commerce in a neighboring region or interconnection?

Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC

Answer No

Document Name

Comment

The retirement of this regional Standard will not negatively affect either reliability or market operations. As highlighted by the Western Power Pool in their comments on WECC Standard Project 0142, the BAL-002-WECC-3 Standard imposes economic challenges and limits the ability to use Contingency Reserves for additional reliability functions, such as accommodating variable generation and maintaining frequency response.

Furthermore, extending the restoration period from 60 to 90 minutes offers a more reasonable timeframe for recovery, enabling entities to replenish contingency reserves more effectively after an event.

Likes 0

Dislikes 0

Response

Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC, Group Name Tacoma Power

Answer No

Document Name

Comment

The retirement of this regional Standard does not adversely impact reliability or commerce. As noted by the Western Power Pool in the comments on the WECC Project 0142, the BAL-002-WECC-3 Standard has adverse economic impacts and prevents the use of Contingency Reserve to support other reliability needs, such as supporting variable resources and frequency response.

Lastly, the timing requirement change from 60 minutes to 90 minutes allows a more practical restoration period to recover from the event and restore contingency reserve, which should decrease the numbers and level of a potential EEA3 since the entity will have time to assess more rational restoration actions.

Likes 0

Dislikes 0

Response

Jennifer Neville - Western Area Power Administration - 1,6

Answer No

Document Name

Comment	
Likes 0	
Dislikes 0	
Response	
Darcy O'Connell - California ISO - 2	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Justin Spear - Western Area Power Administration - 1,6	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alan Wahlstrom - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC, Group Name SPP	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Daniela Atanasovski - APS - Arizona Public Service Co. - 1,3,5,6

Answer No

Document Name

Comment

Likes 0

Dislikes 0

Response

Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - 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

Donna Wood - Tri-State G and T Association, Inc. - 1,3,5

Answer No

Document Name

Comment

Likes 0	
Dislikes 0	
Response	
Casey Perry - TXNM Energy - 1,3 - WECC,Texas RE	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Schuldts - Black Hills Corporation - 1,3,5,6, Group Name Black Hills Corporation - All Segments	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Conway - Western Power Pool - 4	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

3. Does the retirement of Regional Reliability Standard BAL-002-WECC-3 pose a serious and substantial threat to public health, safety, welfare, or national security?

Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC, Group Name Tacoma Power

Answer No

Document Name

Comment

No, the retirement does not pose a serious threat. Instead, this retirement would free up excess reserves being held above the MSSC requirements to serve system demand. This additional available capacity would be better used to address issues associated with IBR integration and variable generation.

Likes 0

Dislikes 0

Response

Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC

Answer No

Document Name

Comment

No, retiring this standard does not present a significant risk. In fact, it would allow reserves currently maintained above the Most Severe Single Contingency (MSSC) requirements to be redirected to meet system demand more effectively.

Likes 0

Dislikes 0

Response

Justin Spear - Western Area Power Administration - 1,6

Answer No

Document Name

Comment

Retiring this standard does not present a significant risk. Western Area Power Administration (WAPA) enthusiastically supports the retirement of the BAL-002-WECC-3 standard. WAPA operates three Balancing Authorities (WALC, WACM, & WAUW) in the WECC footprint. Each of our BAs also participate in the Northwest Power Pool reserve sharing group. This participation has allowed us to reduce our Contingency Reserve obligation while maintaining reliability. All three BAs also participate in organized imbalance markets. Operating our BAs and meeting all the NERC reliability standards efficiently and economically has become increasingly more difficult over the last few years. We have a finite amount of capacity on our federal hydro

resources to balance our loads and resources, maintain reliability, and satisfy our statutory delivery obligations. This constraint has been negatively impacted by the prolonged drought in the West and the increase of Solar and Wind resources that have interconnected to our systems. By retiring the more stringent WECC standard, WAPA would realize a significant reduction to the amount of capacity we would have to commit for Contingency Reserves and would free up this capacity to manage the variability of existing and future variable renewable resources.	
Likes 0	
Dislikes 0	
Response	
Jennifer Neville - Western Area Power Administration - 1,6	
Answer	No
Document Name	
Comment	
Retiring this standard does not present a significant risk. Western Area Power Administration (WAPA) supports the retirement of the BAL-002-WECC-3 standard. WAPA operates three Balancing Authorities (WALC, WACM, & WAUW) in the WECC footprint. Each of our BAs also participate in the Northwest Power Pool reserve sharing group. This participation has allowed us to reduce our Contingency Reserve obligation while maintaining reliability. All three BAs also participate in organized imbalance markets. Operating our BAs and meeting all the NERC reliability standards efficiently and economically has become increasingly more difficult over the last few years. We have a finite amount of capacity on our federal hydro resources to balance our loads and resources, maintain reliability, and satisfy our statutory delivery obligations. This constraint has been negatively impacted by the prolonged drought in the West and the increase of Solar and Wind resources that have interconnected to our systems. By retiring the more stringent WECC standard, WAPA would realize a significant reduction to the amount of capacity we would have to commit for Contingency Reserves and would free up this capacity to manage the variability of existing and future variable renewable resources.	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Conway - Western Power Pool - 4	

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	
Casey Perry - TXNM Energy - 1,3 - WECC,Texas RE	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	
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	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	No
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	No
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Alan Wahlstrom - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC, Group Name SPP	
Answer	No

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Darcy O'Connell - California ISO - 2	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

4. Does the retirement of Regional Reliability Standard BAL-002-WECC-3 pose a serious and substantial burden on competitive markets within the interconnection that is not necessary for reliability?

Jennifer Neville - Western Area Power Administration - 1,6

Answer No

Document Name

Comment

WAPA supports extending the time requirement for restoring Contingency Reserves after an event from 60 minutes to 105 minutes. This approach makes more operational and commercial sense. Western market practices have made the restoration of Contingency Reserves more challenging and introduced more economic and operational risks.

Likes 0

Dislikes 0

Response

Justin Spear - Western Area Power Administration - 1,6

Answer No

Document Name

Comment

WAPA supports extending the time requirement for restoring Contingency Reserves after an event from 60 minutes to 105 minutes. This approach makes more operational and commercial sense. Western market practices have made the restoration of Contingency Reserves more challenging and introduced more economic and operational risks.

Likes 0

Dislikes 0

Response

Alan Wahlstrom - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC, Group Name SPP

Answer No

Document Name

Comment

SPP does not believe the retirement of BAL-002 will pose a serious and substantial burden on competitive markets if there is a sufficient lead time for implementation. Changing SPP's market will require lead time for design, testing, and implementation. SPP is requesting at least an 18-month window after approval to become effective to allow SPP sufficient time to address needed changes.

Likes	0
Dislikes	0
Response	
Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC	
Answer	No
Document Name	
Comment	
SMUD agrees with WAPA's comments on WECC Standard Project 0142 supporting the extension of the restoration period for Contingency Reserves from 60 minutes to 105 minutes. Allowing additional time for restoration is more practical from both operational and commercial perspectives. The existing requirements under BAL-002-WECC-3 have complicated the process of restoring Contingency Reserves and have introduced greater economic and operational risks within western markets.	
Likes	0
Dislikes	0
Response	
Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC, Group Name Tacoma Power	
Answer	No
Document Name	
Comment	
As noted by WAPA in the WECC Project 0142 comments, Tacoma Power supports extending the time requirement for restoring Contingency Reserves after an event from 60 minutes to 105 minutes. This approach makes more operational and commercial sense. Western market practices under BAL-002-WECC-3 have made the restoration of Contingency Reserves more challenging and introduced more economic and operational risks.	
Likes	0
Dislikes	0
Response	
Darcy O'Connell - California ISO - 2	
Answer	No
Document Name	
Comment	

Likes	0
Dislikes	0
Response	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	No
Document Name	
Comment	
Likes	0
Dislikes	0
Response	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - 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	
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5	

Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Casey Perry - TXNM Energy - 1,3 - WECC,Texas RE	
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	
Kevin Conway - Western Power Pool - 4	
Answer	No
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	No
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

5. Do you agree that Regional Reliability Standard BAL-002-WECC-3 is no longer needed to specify more stringent criteria than a continent-wide standard, address matters not included in a continent-wide standard, or address a physical difference in the bulk power system?

Daniela Atanasovski - APS - Arizona Public Service Co. - 1,3,5,6

Answer No

Document Name

Comment

AZPS does not agree with the request to retire BAL-002-WECC-3 in its entirety. From 2019 to 2024, the Western Interconnection has experienced several significant events impacting the Bulk Electric System such as extreme natural events, inverter-based resource events, and resource adequacy that may have benefited from having additional reserves to respond to contingency events. The more stringent criteria in BAL-003-WECC-3 may have alleviated some of these events.

Likes 0

Dislikes 0

Response

Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC, Group Name Tacoma Power

Answer Yes

Document Name

Comment

Tacoma Power agrees with the Drafting Team that holding Contingency Reserves at a level of 3% load plus 3% generation is not technically supported and is more than what is needed for BPS reliability in the western interconnection.

Likes 0

Dislikes 0

Response

Tim Kelley - Sacramento Municipal Utility District - 1,3,4,5,6 - WECC, Group Name SMUD and BANC

Answer Yes

Document Name

Comment

SMUD concurs with the Drafting Team's assessment that maintaining Contingency Reserves at the level of 3% of load plus 3% of generation lacks technical justification and exceeds what is necessary to ensure Bulk Power System reliability within the western interconnection.

Likes 0

Dislikes	0
Response	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
BPA believes the current standard causes WECC entities to hold more contingency reserves than is necessary and allows only 60 minutes to fully recover from an event. With the number of variable generation resources coming online, the capacity being unused by holding too much for contingency reserve can be better allocated to ensure reliability of the interconnection and to help balance those variable energy resources. BPA believes the timing required by the markets causes issues when trying to replenish reserves in the 60 minutes allocated. The 105 minutes allotted in BAL-002-3 (90 minutes after the Contingency Event Recovery Period) is better suited for operations in a market environment. BPA agrees with the rationale in the White Paper provided by the drafting team, as it offers a clear explanation and technical justification for the full retirement of BAL-002-WECC-3.	
Likes	0
Dislikes	0
Response	
Alan Wahlstrom - Southwest Power Pool, Inc. (RTO) - 2 - MRO,WECC, Group Name SPP	
Answer	Yes
Document Name	
Comment	
SPP agrees that the standard would no longer be needed provided that a technical study be conducted to evaluate whether the physical and operational conditions that originally justified BAL-002-WECC-3 still exist. Such a study would provide the necessary evidence to support a retirement decision and align with FERC's historical expectations for technical justification in similar cases. To date, no technical study has been provided to demonstrate that these conditions have materially changed or that the continent-wide standard alone is sufficient to maintain reliability in the region.	
Likes	0
Dislikes	0
Response	
Justin Spear - Western Area Power Administration - 1,6	
Answer	Yes

Document Name	
Comment	
WAPA is concerned with maintaining a standard that is not proven, not evidence-based, and inconsistent with the rest of the continent.	
Likes 0	
Dislikes 0	
Response	
Jennifer Neville - Western Area Power Administration - 1,6	
Answer	Yes
Document Name	
Comment	
WAPA is concerned with maintaining a standard that is not proven, not evidence-based, and inconsistent with the rest of the continent.	
Likes 0	
Dislikes 0	
Response	
Jessica Cordero - Unisource - Tucson Electric Power Co. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kevin Conway - Western Power Pool - 4	
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		
Casey Perry - TXNM Energy - 1,3 - WECC,Texas RE		
Answer	Yes	
Document Name		
Comment		
Likes	0	
Dislikes	0	
Response		
Donna Wood - Tri-State G and T Association, Inc. - 1,3,5		
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	
Darcy O'Connell - California ISO - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Exhibit D

Standard Drafting Team Roster for WECC-0142



WECC

Electric Reliability and Security for the West

WECC-0142 Drafting Team Roster

BAL-002-WECC-3

Contingency Reserve Request to Retire

Drafting Team Roster

Name	Biography
Alan Wahlstrom, Southwest Power Pool	Mr. Wahlstrom has extensive knowledge of the electric power industry primarily focused on transmission and generation engineering, operations, training and compliance with federally-approved reliability standards. His experience includes real-time electric system operations, generation project management and working knowledgeable of hydraulics, pneumatics, pumps, and programmable logic controllers. He is a Trained Accident Investigator and has investigated several industrial accidents to determine the cause and how to prevent the accident from reoccurring. His current responsibilities include investigation of transmission system events. <u>Work History</u> <i>Southwest Power Pool Regional Entity</i> (2008-Present), Little Rock, AR 72205 Lead Reliability Standards Engineer (2017-present) • Events Analyses Program Coordinator responsible for submitting events to Regional Entities and NERC • Provide input to new or revised Regional and NERC standards • Review NERC and Regional Lessons Learned to determine if applicable to SPP Operations and IT departments • Develop and perform training to SPP working groups Lead Engineer, Event Analyst (2010-2017) • Report directly to the President of SPPRE • Analyze Bulk Power System events to determine the cause of an event, track corrective actions to prevent recurrence, and provide lessons learned to the industry. • Provide valuable input for training, education, reliability trend analysis efforts, and reliability standards development, all of which support continued reliability improvement.

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	- Assist in the development of regional reliability assessments that are conducted on a regional, interregional, and interconnection-wide basis. Lead Engineer, RAPA “Reliability Assessment and Performance Analysis” (2010-Present) - Managed the seasonal, long-term and special assessments to examine current and future adequacy and operational reliability of the Southwest Power Pool Region Bulk Power System. - Coordinator for GADS, TADS, DADS (2011-2015) Lead Engineer, Compliance Auditor (2008-2010) - Audit bulk power system owners, operators, and users operating within the SPP Region to verify the findings of compliance - Performed compliance investigations with NERC concerning system events <i>Southwest Power Pool</i> (2006-2008), Little Rock, AR 72205 Senior Operations Trainer (2007-2008) - Train new System Operators and Operation Engineers. Created the OIT Program (Operator in Training), and developed training materials for Southwest Power Pool’s “System Operator Conference”. - Assist Operation Engineers with improvements to simulator models; conduct restoration training and control center back up drills; perform job task analysis, and develop and present training classes to meet FERC requirements. Senior Tariff Administrator ITO (2006-2007) - Assist with development of a new Independent Transmission Operations (ITO) department. Extract and analyze department requirements from the Open Access Transmission Tariff (OATT), create and deliver training to Market participants on the OATT, and write policies and procedures for the ITO department. - Validate, evaluate and respond to Transmission Service Requests and Electronic Tags in accordance with the OATT. <i>Vectren Energy</i> (1999-2006), Evansville, IN 47702 Transmission Operations Engineer/ NERC Compliance Coordinator/ Training Coordinator (2003-2006)
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	• Engineer responsibilities include performing power flow studies, transmission outage coordination and providing other technical support to operations personnel during normal and emergency operations. • NERC Compliance Administrator for the Transmission System Operations Department. • Administrator for Vectren Energy in 2005. Responsible for creating policy and implementing changes to bring Vectren into compliance with NERC standards. • Developed, organized and wrote Vectren's Emergency Black Start Procedures. Also created and wrote procedures for generator reactive testing. • Transmission System Operations Training Coordinator duties included initiation and design of the annual training program for operations personnel. Transmission System Operator (1999-2003) • Responsible for monitoring and controlling the electric grid for Southern Indiana. • Duties include monitoring system parameters such as voltage, current, power, equipment status, etc. and to react to and solve problems appropriately. • Prepare for and issue instructions for switching equipment, and directing maintenance personnel during emergency situations. <i>American Electric Power (1987-1999), Rockport, IN 47635</i> Supervisor / Plant Engineer (1988-1999) • Manage major generator plant projects in excess of 10 million dollars. • Responsible for overseeing a team of electricians. • Perform equipment efficiency tests on pumps, cooling towers, coal mills, unit heat rate, etc. • Design new equipment such as coal waste water drainage, dust collector controls, sampling systems, etc. • Work with production teams to identify and repair problems. Conduct training programs for electricians. Relay Technician (1987-1988)
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	• Relay Technician for Rockport Plant start up. Responsibilities included inspecting drawings; checking newly installed cables, wiring; redesigning and rewiring newly installed controls. • Experienced with 600 volt and larger breakers' switch gear, protective relays and large motors. <i>Century Communications</i> (1982-1984) Owensboro, KY 42301 <i>Assistant Chief Engineer</i> (1982-1984) Responsible for maintaining equipment performance, FCC performance tests, repairing equipment such as large transmitters, microwave equipment, receivers, audio equipment, and video equipment. <u>Academic, Education & Professional Certification</u> • Bachelor of Science Degree, Electrical Engineering; Western Kentucky University, Bowling Green, Kentucky • Associate of Science, Industrial Technology; IVY Tech State College, Evansville, Indiana • Technical Certificate, Electronic Communications; Kentucky State College, Owensboro, Kentucky <u>Professional Development</u> <i>Electric System Operator</i> • NERC Reliability Authority Certification, Evansville, IN • Continual training (60-70 Hrs/year) to maintain NERC Reliability Authority Certification <i>Engineering/Technical</i> • Certified Hydraulic Technician, Fluid Power Society. • PLC training, Design Data, Columbus, Ohio • Hydraulic and pneumatic training, Dravo Wellman, Pittsburgh, PA • ABB Generator Excitation training, Charleston WV. • Voltage Stability, General Electric, Indianapolis, IN
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Bart McManus¹ Bonneville Power Administration	Mr. McManus is an electrical engineer in the Operational Controls group at the Bonneville Power Administration (BPA). His core work relates to Balancing Authority management and Contingency Reserves. He has been providing solid, functional solutions to Contingency Reserve issues for the last 25 years. Mr. McManus' experience also includes: • Member of the first BAL-002-WECC Drafting Team • Member of the WECC Resources Subcommittee that created the original BAL-002 Disturbance Control Standard. • As one of BPA's BAL-002 and BAL-002-WECC subject matter experts, Mr. McManus ensures reliability compliance for BPA by providing expert analysis, keeping current with industry trends, and participating in Standards Development activities. • Represents BPA the NWPP Reserve Sharing Group (RSG), which is responsible for compliance of BAL-002 and BAL-002-WECC for its 32 BA member entities. • Coordinates across multiple technical groups to consolidate BPA's agency experience in Balancing Authority management, Contingency Reserves. Mr. McManus hold a Bachelor of Science in Electrical Engineering from the University of Washington (1993).
ChaRee DiFabio, Northwest Power Pool	Mrs. DiFabio has been with the Northwest Power Pool (NWPP) since 2000. She is currently the Reserve Sharing Group (RSG) Committee Manager and has held this position since 2013. She manages all activities related to the NWPP RSG Committee and in addition, manages the NWPP Reserve Sharing Program which includes, program documentation updates to conform with industry requirements and applicable standards (WECC & NERC BAL-002), implementation of new BAs into the NWPP RSG, Reserve Sharing Training, and is responsible for reporting and compliance documentation as related to BAL-002.
Jessica Kelsey Arizona Public Service (APS)	As a Load Serving Entity (LSE) energy trader responsible for procuring reserves associated with BAL-002-WECC-3, Contingency Reserve, Ms. Kelsey brings a unique perspective to the team. Ms. Kelsey has worked in the electric industry since 2013. During that time, she has served as a real-time energy trader, program manager for APS's

¹ WSC approved December 8, 2020.



	entrance into the Energy Imbalance Market, and as supervisor of the real-time energy trading team (2018-2020). In these roles Ms. Kelsey has been responsible for the planning and procurement of contingency reserves hour-to-hour and intra-hour keeping APS in compliance with NERC and WECC standards.
Kevin Conway Western Power Pool²	Mr. Conway is a senior level utility operations executive with over 35 years of experience in multi-faceted fields of power generation, transmission operations, power management, information technology, engineering, system maintenance, physical and cyber security measures, industrial safety, administration and NERC compliance.
Michael Pfeister Salt River Project³	Mr. Pfeister currently serves as Manager of Grid Operations for Salt River Project (SRP), Scottsdale, AZ (March 2019 – Present) where he is responsible for: 1) the safe and reliable operation of the SRP power delivery system, 2) managing frontline Automatic Generation Control and real-time Power Distribution Operations, 3) managing six Grid Operations Shift Supervisors and operations staff comprised of 24 operators, 4) ensuring a culture of compliance. Mr. Pfeister' s experience includes: Manager, Grid Operations Support <i>SRP, – May 2018 – March 2019</i> Responsible for the frontline support of AGC and PDO real time operations. Manage support staff comprised of 4 System Operators and 4 support Engineers. Efforts include SRP implementation of the Energy Imbalance Market, selection of RC, support of the Operator Training Simulator, process improvements, interfacing with many different departments within SRP, BA and energy market representatives throughout the WECC, and the Reliability Coordinator. Manager, Balancing Area Operations <i>SRP, – June 2015 – May 2018</i>

² WSC approved May 2024.

³ WSC approved December 8, 2020.



	Responsible for the safe, reliable operation of the SRP Balancing Area (BA) within the bounds of over 100 NERC requirements. Manage BA staff comprised of 13 System Operators and one support Engineer. Supervisor, Scheduling and Reliability Services <i>SRP – May 2008 – June 2015</i> Managed SRP long term transmission sales per the SRP OATT. Supervised day-ahead scheduling and After-the-fact reconciliation personnel and OASIS transmission outage scheduling function. Served as TGO Duty Supervisor. Voting member of the WECC Interchange Scheduling and Accounting Subcommittee, Chair of WECC Real Time Scheduling Work Group, and served as chair of several WECC regional criterion drafting teams. Support TGO in various WestConnect initiatives and in NERC compliance. Supervisor, TGO Training <i>SRP– March 2005-May 2008</i> Developed and administered training programs for certification of TGO System Operators and to meet departmental needs. Monitored for changing NERC and WECC training requirements and adjusted as necessary including the transition from NERC exams to the use of continuing education hours for credential maintenance. System Operator <i>SRP– March 1997 – March 2005</i> Power Plant Operator <i>SRP – October 1988 – March 1997</i> Mr. Pfeister holds a Bachelor of Science degree in Management from the Western International University. He is a member/contributor to various WECC committees and their subgroups.
Rick Hydzik Avista Corp ⁴	Mr. Hydzik currently serves at Avista Corp where he is responsible for System Operations procedures and compliance related to BAL-002 and BAL-002-WECC (16 years). Mr. Hydzik' s experience also includes:

⁴ WSC approved December 8, 2020.



	• Responsibility for Avista's participation and interaction with the Northwest Power Pool (NWPP) Reserve Sharing Group, including data collection and analysis • Chair of the NWPP Reserve Sharing Group Committee • Background in System Protection (10years) and System Planning (3 years) • Participation on several NERC and WECC drafting teams • Chair of various WECC INT drafting teams and presently serving as vice Chair of NERC BAL-003 standard drafting team.
Christopher Mclean	Christopher McLean has worked as a technical subject matter expert at the California Energy Commission since late 2008. Mr. McLean earned a Bachelor of Science degree in Mathematics and Actuarial Science in 1999 at Oregon State University and has been plying his craft in the energy sector ever since. From private sector consulting, to managing portfolios of CRRs, along with many and varied public sector collaborations, Mr. McLean brings more than twenty years of power systems modeling experience to the energy sector discussion. <i>Professional Experience</i> Electric Transmission Systems Program Specialist, California Energy Commission; 2009 – • Policy focused assessments of production cost modeling, power flow modeling and other systems modeling approaches brought to various forums at the CAISO, CPUC and WECC; support of the Energy Commission's data collection and integration processes for obtaining and analyzing system data from the CAISO and WECC; advancement of the Energy Commission's utilization of GIS analytics in long term system planning. CRR Portfolio Manager, CES Ltd.; 2008 • Developed strategic, multi-million dollar, Congestion Revenue Rights hedging instrument portfolios for several clients participating in the CAISO CRRMarkets.

	Energy Analyst, California Electricity Oversight Board; 2006 – 2008, 2003 - 2004 • Maintained the EOB market monitoring function, supplied data analytics and market rules analyses in support of EOB litigation of California Energy Crisis cases before the FERC. 1 Market Monitoring Specialist – Ancillary Services, California Independent System Operator, 2004 – 2006 • Market Monitor responsible for multiple time-frame assessments of four CAISO markets for ancillary services; operated and maintained the CAISO production cost modeling platform supporting the development of the Transmission Economic Assessment Methodology, expert witness at CPUC proceeding. Staff Consultant, Henwood Energy Services, 1999 – 2003 • Conduct regional wholesale market simulations with production cost models supporting Project Finance assessments in all NERC regions; contributions to the development of novel wholesale market risk analytics software. Education Oregon State University: B. Sci. Mathematics, 1999
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