Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.

Description of Current Draft

(Describe the type of action associated with this posting, such as 30-day informal comment period, 45-day formal comment period with parallel ballot, 45-day formal comment period with parallel additional ballot, final ballot.)

Completed Actions	Date
The SAR for Project 2007-18, Reliability Based Controls, was posted for a 30-day formal industry comment period.	May 15, 2007
The SAR for Project 2007-05, Balancing Authority Controls, was posted for a 30-day formal industry comment period.	July 3, 2007
A revised SAR for Project 2007-05, Reliability Based Controls, was posted for a second 30-day formal industry comment period.	September 10, 2007
The Standards Committee approved Project 2007-18, Reliability Based Controls, to be moved to standard drafting.	December 11, 2007
~~The SAR for Project 2007-05, Balancing Authority Controls, was posted for a 30-day formal industry comment period.~~	~~July 3, 2007~~
The Standards Committee approved Project 2007-05, Balancing Authority Controls, to be moved to standard drafting.	January 18, 2008
The Standards Committee approved the merger of Project 2007-05, Balancing Authority Controls, and Project 2007-18, Reliability-based Control, as Project 2010-14, Balancing Authority Reliability-based Controls.	July 28, 2010
The NERC Standards Committee approved breaking Project 2010-14, Balancing Authority Reliability-based Controls, into two phases and moving Phase 1 (Project 2010-14.1, Balancing Authority Reliability-based Controls – Reserves) into formal standards development.	July 13, 2011
The draft standard was posted for 30-day formal industry comment period.	June 4, 2012
The second draft standard was posted for 45-day formal industry comment period and initial ballot.	March 12, 2013

The third draft standard was posted for 45-day formal industry comment period and additional ballot.	August 2, 2013
The fourth draft standard was posted for 45-day formal industry comment period and additional ballot.	October 28, 2013
The fifth draft standard was posted for a 45 day formal industry comment period and additional ballot.	August 20, 2014
The sixth draft standard was posted for a 45-day formal industry comment period and additional ballot.	January 29, 2015
The seventh draft standard was posted for a 45-day formal industry comment period and additional ballot.	July 7, 2015

Anticipated Actions	Date
~~45-day formal comment period with parallel additional ballot~~	~~June/July 2015~~
Final ballot	~~July~~ September 2015
NERC Board adoption	~~August~~ November 2015

New or Modified Terms Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard.

Term:

Balancing Contingency Event: Any single event described in Subsections (A), (B), or (C) below, or any series of such otherwise single events, with each separated from the next by one minute or less.

A. Sudden loss of generation:
    a. Due to
        i. unit tripping,
        ii. loss of generator Facility resulting in isolation of the generator from the Bulk Electric System or from the responsible entity's System, or
        iii. sudden unplanned outage of transmission Facility;
    b. And, that causes an unexpected change to the responsible entity's ACE;
B. Sudden loss of an import, due to unplanned outage of transmission equipment that causes an unexpected imbalance between generation and Demand on the Interconnection.
C. Sudden restoration of a Demand that was used as a resource that causes an unexpected change to the responsible entity's ACE.

Most Severe Single Contingency (MSSC): The Balancing Contingency Event, due to a single contingency ~~as~~ identified ~~and maintained in the~~using system models maintained within the Reserve Sharing Group (RSG), or a Balancing Authority's area that is not part of a Reserve Sharing Group, that would result in the greatest loss (measured in MW) of resource output used by the RSG or a Balancing Authority that is not participating as a member of a RSG at the time of the event to meet Firm Demand and export obligation (excluding export obligation for which Contingency Reserve obligations are being met by the Sink Balancing Authority).

Reportable Balancing Contingency Event: Any Balancing Contingency Event occurring within a one-minute interval of an initial sudden decline in ACE based on EMS scan rate data that results in a loss of MW output less than or equal to the Most Severe Single Contingency, and greater than or equal to the lesser amount of: (i) 80% of the Most Severe Single Contingency, or (ii) the amount listed below for the applicable Interconnection. Prior to any given calendar quarter, the 80% threshold may be reduced by the responsible entity upon written notification to the Regional Entity.

- Eastern Interconnection - 900 MW
- Western Interconnection – 500 MW

- ERCOT – 800 MW
- Quebec – 500 MW

Contingency Event Recovery Period: 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.

Contingency Reserve Restoration Period: A period not exceeding 90 minutes following the end of the Contingency Event Recovery Period.

Pre-Reporting Contingency Event ACE Value: The average value of Reporting ACE, or Reserve Sharing Group Reporting ACE when applicable, in the 16-second interval immediately prior to the start of the Contingency Event Recovery Period based on EMS scan rate data.

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

Rationale for Contingency Reserve Definition: Originally a waiver of the R3 Contingency Reserve Restoration requirement was proposed in the event of an Energy Emergency Alert (EEA). This was predicated on a definition of Contingency Reserve that did not include readiness to reduce Firm Demand during the Contingency Reserve Restoration Period during an EEA and on concern that the attempt to restore Contingency Reserve during an EEA could ~~well~~ result in actual curtailment of Firm Demand in order to free up generation not to be used but merely to be counted as restored Contingency Reserve when no other Balancing Contingency Event arose. As an alternative to waiving R3, and to remedy the concern, readiness to reduce Firm Demand during the Contingency Reserve Restoration Period during an EEA was proposed for inclusion in the definition of Contingency Reserve as it would make Firm Demand merely ready to be curtailed in case another Contingency arose during an EEA.

Readiness to reduce Firm Demand here is a way of providing Contingency Reserves exclusively when the Responsible Entity is in a Contingency Reserve Restoration Period during an emergency. Readiness means the Responsible Entity is prepared to reduce Firm Demand to mitigate events which may increase demand or reduce supply causing unacceptable risk. The Responsible Entity should have processes and

procedures for direct control over the Firm Demand in place for it to be considered Contingency Reserves prior to the event.

Contingency Reserve: 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.

When this standard has received ballot approval, the text boxes will be moved to the Supplemental Material Section of the standard.

A. Introduction

1. **Title:** Disturbance Control Standard – Contingency Reserve for Recovery from a Balancing Contingency Event

2. **Number:** BAL-002-2

3. **Purpose:** To ensure the Balancing Authority or Reserve Sharing Group balances resources and demand and returns the Balancing Authority's or Reserve Sharing Group's Area Control Error to defined values (subject to applicable limits) following a Reportable Balancing Contingency Event.

4. **Applicability:**

   4.1. Responsible Entity

   4.1.1. Balancing Authority

   4.1.1.1. A Balancing Authority that is a member of a Reserve Sharing Group is the Responsible Entity only in periods during which the Balancing Authority is not in active status under the applicable agreement or governing rules for the Reserve Sharing Group.

   4.1.2. Reserve Sharing Group

5. **Effective Date:** See the Implementation Plan for BAL-002-2.

6. **Background:**

   Reliably balancing an Interconnection requires frequency management and all of its aspects. Inputs to frequency management include Tie-Line Bias Control, Area Control Error (ACE), and the various Requirements in NERC Resource and Demand Balancing Standards, specifically BAL-001-2 Real Power Balancing Control Performance and BAL-003-1 Frequency Response and Frequency Bias Setting.

B. Requirements and Measures

Rationale for Requirement R1: Requirement R1 reflects the operating principles first established by NERC Policy 1 (Generation Control and Performance). Its objective is to assure the Responsible Entity balances resources and demand and returns its Reporting Area Control Error (ACE) to defined values (subject to applicable limits) following a Reportable Balancing Contingency Event. It requires the Responsible Entity to recover from events that would be less than or equal to the Responsible Entity's MSSC. It establishes the amount of Contingency Reserve and recovery and restoration timeframes the Responsible Entity must demonstrate in a compliance evaluation. It is intended to eliminate the ambiguities and questions associated with the existing standard. In addition, it allows Responsible Entities to have a clear way to demonstrate compliance and support the Interconnection to the full extent of its MSSC.

Requirement R1 does not apply when an entity experiences a Balancing Contingency Event that exceeds its MSSC (which includes multiple Balancing Contingency Events as described in R1 part 1.3.2 below) because a fundamental goal of the SDT is to assure the Responsible Entity has enough flexibility to maintain service to Demand while managing reliability. The SDT's intent is to eliminate any potential overlap or conflict with any other NERC Reliability Standard to eliminate duplicative reporting, and other issues.

Commenters suggested a Quarterly Compliance similar to the current reports sent to NERC. The drafting team attempted to draft measurement language and VSL's for quarterly monitoring of compliance to R1. But the drafting team found that the VSL levels developed were likely to place smaller BA's and RSGs in a severe violation regardless of the size of the failure. Therefore, the drafting team has not adopted a quarterly compliance calculation. Also, the proposed requirement and compliance process meets the directive in Paragraph 354 of Order 693.

Finally, commenters have suggested that the language in R1 part 1.3 be changed to specifically state under which EEA level the exclusion applies. The drafting team disagrees with this proposal. NERC is in the process of changing the EEA levels and what is expected in each level. The current EEA levels suggest that when an entity is experiencing an EEA Level 2 or 3 it is short of Contingency Reserves as normally defined to exclude readiness to curtail a specific amount of Firm Demand. Under the proposed EEA process, this would only be during an EEA Level 3. In order to reduce the need for consequent modifications of the BAL-002 standard, the drafting team has developed the proposed language in Requirement 1 Part 1.3.1 such that it addresses both current and future EEA process. In addition, the drafting team has added some clarifying language to 1.3.1 since comments were presented in previous postings expressing a concern only a Balancing Authority may request declaration of an EEA and a RSG cannot request an EEA. The standard drafting team's intent has always been if a BA is experiencing an EEA event under which its contingency reserve has been activated, the RSG in which it resides would also be considered to be exempt from R1 compliance.

R1. The Responsible Entity experiencing a Reportable Balancing Contingency Event shall: *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*

1.1. within the Contingency Event Recovery Period, demonstrate recovery by returning its Reporting ACE to at least the recovery value of:

- zero (if its Pre-Reporting Contingency Event ACE Value was positive or equal to zero); however, any Balancing Contingency Event that occurs during the Contingency Event Recovery Period shall reduce the required recovery: (i) beginning at the time of, and (ii) by the magnitude of, such individual Balancing Contingency Event,

or,

- its Pre-Reporting Contingency Event ACE Value (if its Pre-Reporting Contingency Event ACE Value was negative); however, any Balancing Contingency Event that occurs during the Contingency Event Recovery Period shall reduce the required recovery: (i) beginning at the time of, and (ii) by the magnitude of, such individual Balancing Contingency Event.

1.2. document all Reportable Balancing Contingency Events using CR Form 1.

1.3. deploy Contingency Reserve, within system constraints, to respond to all Reportable Balancing Contingency Events, however, it is not subject to compliance with Requirement R1 part 1.1 if:

1.3.1 the Responsible Entity ~~is~~:

- is a Balancing Authority experiencing a Reliability Coordinator declared Energy Emergency Alert Level or is a Reserve Sharing Group whose member, or members, are 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, and
- ~~the Responsible Entity~~ has depleted its Contingency Reserve to a level below its Most Severe Single Contingency

or,

1.3.2 the Responsible Entity experiences:

- multiple Contingencies where the combined MW loss exceeds its Most Severe Single Contingency and that are defined as a single Balancing Contingency Event, or

- multiple Balancing Contingency Events within the sum of the time periods defined by the Contingency Event Recovery Period and Contingency Reserve Restoration Period whose combined magnitude exceeds the Responsible Entity's Most Severe Single Contingency.

M1. Each Responsible Entity shall have, and provide upon request, as evidence, a CR Form 1 with date and time of occurrence to show compliance with Requirement R1. If Requirement R1 part 1.3 applies, then dated documentation that demonstrates compliance with Requirement R1 part 1.3 must also be provided.

Rationale for Requirement R2: R2 establishes the need to actively plan in the near term (e.g., day-ahead) for expected Reportable Balancing Contingency Events. This requirement is similar to the current standard which requires an entity to have available a level of contingency reserves equal to or greater than its Most Severe Single Contingency.

R2. Each Responsible Entity shall develop, review and maintain annually, and implement an Operating Process as part of its Operating Plan to determine its Most Severe Single Contingency and make preparations to have Contingency Reserve equal to, or greater than the Responsible Entity's Most Severe Single Contingency available for maintaining system reliability. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

M2. Each Responsible Entity will have the following documentation to show compliance with Requirement R2:

- a dated Operating Process;
- evidence to indicate that the Operating Process has been reviewed and maintained annually; and,
- evidence such as Operating Plans or other operator documentation that demonstrate that the entity determines its Most Severe Single Contingency and that Contingency Reserves equal to or greater than its Most Severe Single Contingency are included in this process.

Rationale for Requirement R3: This requirement is similar to the existing requirement that an entity that has experienced an event shall restore its Contingency Reserves within 105 minutes of the event. Note that if an entity is experiencing an EEA it may need to depend on potential availability (or make ready for potential curtailment) of its firm loads to restore Contingency Reserve. This is the reason for the changes to the definition of Contingency Reserve in the posting.

R3. Each Responsible Entity, following a Reportable Balancing Contingency Event, shall restore its Contingency Reserve to at least its Most Severe Single Contingency, before the end of the Contingency Reserve Restoration Period, but any Balancing Contingency Event that occurs before the end of a Contingency Reserve Restoration ~~p~~Period resets the beginning of the Contingency Event Recovery Period. *[Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]*

M3. Each Responsible Entity will have documentation demonstrating its Contingency Reserve was restored within the Contingency Reserve Restoration Period, such as historical data, computer logs or operator logs.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

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

1.2. Evidence Retention

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

The Responsible Entity shall retain data or evidence to show compliance for the current year, plus three previous calendar years, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

If a Responsible Entity is found noncompliant, it shall keep information related to the noncompliance until found compliant, or for the time period specified above, whichever is longer.

The Compliance Enforcement Authority shall keep the last audit records and all subsequent requested and submitted records.

1.3. Compliance Monitoring and Assessment Processes:

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

1.4. Additional Compliance Information

The Responsible Entity may use Contingency Reserve for any Balancing Contingency Event and as required for any other applicable standards.

Table of Compliance Elements

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	**Real-time Operations**	**Medium**	The Responsible Entity achieved less than 100% but at least 90% of required recovery from a Reportable Balancing Contingency Event during the Contingency Event Recovery Period OR The Responsible Entity failed to use CR Form 1 to document a Reportable Balancing Contingency Event.	The Responsible Entity achieved less than 90% but at least 80% of required recovery from a Reportable Balancing Contingency Event during the Contingency Event Recovery Period.	The Responsible Entity achieved less than 80% but at least 70% of required recovery from a Reportable Balancing Contingency Event during the Contingency Event Recovery Period.	The Responsible Entity achieved less than 70% of required recovery from a Reportable Balancing Contingency Event during the Contingency Event Recovery Period.
R2.	**Operations Planning**	**Medium**	The Responsible Entity developed and implemented an Operating Process to determine its Most Severe Single Contingency and to have Contingency Reserve equal to, or	N/A	The Responsible Entity developed an Operating Process to determine its Most Severe Single Contingency and to have Contingency Reserve equal to, or greater than the	The Responsible Entity failed to develop an Operating Process to determine its Most Severe Single Contingency and to have Contingency Reserve equal to, or greater than the

			greater than the Responsible Entity's Most Severe Single Contingency but failed to maintain annually the Operating Process.		Responsible Entity's Most Severe Single Contingency but failed to implement the Operating Process.	Responsible Entity's Most Severe Single Contingency..
R3	**Real-time Operations**	**Medium**	The Responsible Entity restored less than 100% but at least 90% of required Contingency Reserve following a Reportable Balancing Contingency Event during the Contingency Event Restoration Period.	The Responsible Entity restored less than 90% but at least 80% of required Contingency Reserve following a Reportable Balancing Contingency Event during the Contingency Event Restoration Period.	The Responsible Entity restored less than 80% but at least 70% of required Contingency Reserve following a Reportable Balancing Contingency Event during the Contingency Event Restoration Period.	The Responsible Entity restored less than 70% of required Contingency Reserve following a Reportable Balancing Contingency Event during the Contingency Event Restoration Period.

D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

BAL-002-2 Contingency Reserve for Recovery from a Balancing Contingency Event Background Document

CR Form 1

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed "Proposed" from Effective Date	Errata
0	February 14, 2006	Revised graph on page 3, "10 min." to "Recovery time." Removed fourth bullet.	Errata
1	September 9, 2010	Filed petition for revisions to BAL-002 Version 1 with the Commission	Revision
1	January 10, 2011	Commission approved BAL-002-1	
1	April 1, 2012	Effective Date of BAL-002-1	
2	November 2015	NERC ~~BOT~~ Board Adoption	Complete revision

Standards Attachments

NOTE: Use this section for attachments or other documents that are referenced in the standard as part of the requirements. These should appear after the end of the standard template and before the Supplemental Material. If there are none, delete this section.

[Application Guidelines, Guidelines and Technical Basis, Training Material, Reference Material and/or other Supplemental Material]

Rationale

Upon Board approval, the text from the rationale boxes will be moved to this section.