

# Reliability Standard Audit Worksheet<sup>1</sup>

## BAL-002-2 – Disturbance Control Performance - Contingency Reserve for Recovery from a Balancing Contingency Event

*This section to be completed by the Compliance Enforcement Authority.*

**Audit ID:** Audit ID if available; or REG-NCRnnnnn-YYYYMMDD  
**Registered Entity:** Registered name of entity being audited  
**NCR Number:** NCRnnnnn  
**Compliance Enforcement Authority:** Region or NERC performing audit  
**Compliance Assessment Date(s)<sup>2</sup>:** Month DD, YYYY, to Month DD, YYYY  
**Compliance Monitoring Method:** [On-site Audit | Off-site Audit | Spot Check]  
**Names of Auditors:** Supplied by CEA

### Applicability of Requirements

	BA	DP	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
R1	X <sup>3</sup>										X				
R2	X <sup>3</sup>										X				

### Legend:

Text with blue background:	Fixed text – do not edit
Text entry area with Green background:	Entity-supplied information
Text entry area with white background:	Auditor-supplied information

<sup>1</sup> NERC developed this Reliability Standard Audit Worksheet (RSAW) language in order to facilitate NERC’s and the Regional Entities’ assessment of a registered entity’s compliance with this Reliability Standard. The NERC RSAW language is written to specific versions of each NERC Reliability Standard. Entities using this RSAW should choose the version of the RSAW applicable to the Reliability Standard being assessed. While the information included in this RSAW provides some of the methodology that NERC has elected to use to assess compliance with the requirements of the Reliability Standard, this document should not be treated as a substitute for the Reliability Standard or viewed as additional Reliability Standard requirements. In all cases, the Regional Entity should rely on the language contained in the Reliability Standard itself, and not on the language contained in this RSAW, to determine compliance with the Reliability Standard. NERC’s Reliability Standards can be found on NERC’s website. Additionally, NERC Reliability Standards are updated frequently, and this RSAW may not necessarily be updated with the same frequency. Therefore, it is imperative that entities treat this RSAW as a reference document only, and not as a substitute or replacement for the Reliability Standard. It is the responsibility of the registered entity to verify its compliance with the latest approved version of the Reliability Standards, by the applicable governmental authority, relevant to its registration status.

The NERC RSAW language contained within this document provides a non-exclusive list, for informational purposes only, of examples of the types of evidence a registered entity may produce or may be asked to produce to demonstrate compliance with the Reliability Standard. A registered entity’s adherence to the examples contained within this RSAW does not necessarily constitute compliance with the applicable Reliability Standard, and NERC and the Regional Entity using this RSAW reserves the right to request additional evidence from the registered entity that is not included in this RSAW. Additionally, this RSAW includes excerpts from FERC Orders and other regulatory references. The FERC Order cites are provided for ease of reference only, and this document does not necessarily include all applicable Order provisions. In the event of a discrepancy between FERC Orders, and the language included in this document, FERC Orders shall prevail.

<sup>2</sup> Compliance Assessment Date(s): The date(s) the actual compliance assessment (on-site audit, off-site spot check, etc.) occurs.

<sup>3</sup> 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.

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**Findings**

**(This section to be completed by the Compliance Enforcement Authority)**

Req.	Finding	Summary and Documentation	Functions Monitored
R1			
R2			

Req.	Areas of Concern

Req.	Recommendations

Req.	Positive Observations

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**Subject Matter Experts**

Identify the Subject Matter Expert(s) responsible for this Reliability Standard.

**Registered Entity Response (Required; Insert additional rows if needed):**

SME Name	Title	Organization	Requirement(s)

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**R1 Supporting Evidence and Documentation**

- R1.** The Responsible Entity experiencing a Reportable Balancing Contingency Event shall, 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, during the Contingency Event Recovery Period, any Balancing Contingency Event that occurs shall reduce the required recovery: (i) beginning at the time of, and (ii) by the magnitude of, each individual Balancing Contingency Event,
- or,
- Its Pre-Reporting Contingency Event ACE Value, (if its Pre-Reporting Contingency Event ACE Value was negative); however, during the Contingency Event Recovery Period, any Balancing Contingency Event that occurs shall reduce the required recovery: (i) beginning at the time of, and (ii) by the magnitude of, each individual Balancing Contingency Event.
- 1.1.** All Reportable Balancing Contingency Events will be documented using CR Form 1.
- 1.2.** A Responsible Entity is not subject to compliance with Requirement R1 when it is experiencing a Reliability Coordinator approved Energy Emergency Alert Level under which Contingency Reserves have been activated.
- 1.3** Requirement R1 (in its entirety) does not apply:
- (i) when the Responsible Entity experiences a Balancing Contingency Event that exceeds its Most Severe Single Contingency, or
  - (ii) after multiple Balancing Contingency Events for which the combined magnitude exceeds the Responsible Entity's Most Severe Single Contingency for those events that occur within a 105-minute period.
- 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, or dated documentation that demonstrates compliance with Requirement 1.2 and 1.3.

**Registered Entity Response (Required):**

**Question:**

Has entity experienced any Reportable Balancing Contingency Events during the compliance monitoring period?

Yes  No

If yes, provide a list of such events as indicated below. If no, how did entity determine there were no such events?

Has entity experienced any Reliability Coordinator approved Energy Emergency Alert under which Contingency Reserves were activated at the time of any Reportable Balancing Contingency Events?

Yes  No

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If yes, identify the event(s) which occurred during an Energy Emergency Alert?

Has entity experienced multiple Balancing Contingency Events for which the combined magnitude exceeds entity's Most Severe Single Contingency for those events that occur within a 105 minute period for any Reportable Balancing Contingency Events?

Yes  No

If yes, identify those events.

[Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.]

**Registered Entity Response (Required):**

**Compliance Narrative:**

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

**Evidence Requested<sup>1</sup>:**

<b>Provide the following evidence, or other evidence to demonstrate compliance.</b>
(R1) Provide a list of all Balancing Contingency Event(s) (both reportable and non-reportable), which exceeded the threshold established in the definition of Reportable Balancing Authority Contingency Events, experienced during the compliance monitoring period.
(R1 and Part 1.1) Provide a CR Form 1 with date and time of occurrence for each Reportable Balancing Contingency Event experienced during the compliance monitoring period.
(Part 1.2) Provide dated documentation for all Reportable Balancing Contingency Events experienced when a Reliability Coordinator approved Energy Emergency Alert Level and Contingency Reserves have been activated during the compliance monitoring period.
(Part 1.3) Provide dated documentation for all Reportable Balancing Contingency Events experienced when multiple Balancing Contingency Events occurred and the combined magnitude exceeds entity's Most Severe Single Contingency for those events that occurred within a 105 minute period during the compliance monitoring period.

**Registered Entity Evidence (Required):**

<b>The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.</b>					
<b>File Name</b>	<b>Document Title</b>	<b>Revision or Version</b>	<b>Document Date</b>	<b>Relevant Page(s) or Section(s)</b>	<b>Description of Applicability of Document</b>

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**Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):**


**Compliance Assessment Approach Specific to BAL-002-2, R1**

*This section to be completed by the Compliance Enforcement Authority*

	(Part 1.1) Review the list of all Balancing Contingency Events (both reportable and non-reportable) experienced during the compliance monitoring period and verify that all reportable events are documented on a CR Form 1.
	(R1 and Part 1.1) Review CR Form 1 for each experienced Reportable Balancing Contingency Event to validate the entity recovered within the Contingency Event Recovery Period 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), or its Pre-Reporting Contingency Event ACE Value (if its Pre-Reporting Contingency Event ACE Value was negative). If entity did not recover, verify that exception was appropriate per Part 1.2 or Part 1.3.
<b>Note to Auditor:</b> See newly defined or revised terms associated with BAL-002-2 in the Additional Information section of this RSAW.  When sampling applicable Events for audit testing, auditors should consider various sources for selecting sample items. Where risk is higher, auditors should use their knowledge and experience to learn of applicable Events for the entity and then verify, on a sample basis, that the entity responded to such events in accordance with Requirement R1. Possible sources of events include CR Form-1 documents, communications with Event Reporting staff at the Regional Entities and NERC, and knowledge acquired through compliance monitoring procedures the auditor applied to other entities.	

**Auditor Notes:**

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**R2 Supporting Evidence and Documentation**

- R2.** The Responsible Entity shall maintain Contingency Reserve, averaged over each Clock Hour, greater than or equal to its average Clock Hour Most Severe Single Contingency, except during one or more of the following periods when the Responsible Entity is:
- 2.1.** using its Contingency Reserve, for a period not to exceed 90 minutes, to mitigate the reliability concerns associated with Contingencies that are not Balancing Contingency Events; and/or
  - 2.2.** using its Contingency Reserve, for a period not to exceed 90 minutes, to respond to an Operating Instruction requiring the use of Contingency Reserve; and/or
  - 2.3.** using its Contingency Reserve for a period not to exceed 90 minutes, to resolve the exceedance of a System Operating Limit (SOL) or Interconnection Reliability Operation Limit (IROL) that requires the use of Contingency Reserve; and/or
  - 2.4.** in a Contingency Reserve Restoration Period; and/or
  - 2.5.** in a Contingency Event Recovery Period; and/or
  - 2.6.** in an Energy Emergency Alert Level under which the Responsible Entity no longer has required Contingency Reserve available provided that the Responsible Entity has made preparations for interruption of Firm Load to replace the shortfall of Contingency Reserve to avoid the uncontrolled failure of components or cascading outages of the Interconnection. For this exemption to apply, the preparations must be initiated within 5 minutes from the time that the Energy Emergency Alert Level is declared.

- M2.** Each Responsible Entity shall have dated documentation that demonstrates compliance with Requirement R2. Evidence of compliance may include, but is not limited to, documenting Contingencies and Energy Emergency Alert Levels through outage records, operator logs, and others.

Compliance may be achieved by demonstrating that:

- Contingency Reserve, averaged over each Clock Hour, meets or exceeds the required Contingency Reserve; or,
- Contingency Reserve has been restored to the required Contingency Reserve levels within the specified period: or,
- the sum of the Contingency Reserve and Firm Load available as a substitute for unavailable Contingency Reserve reaches the required Contingency Reserve level within the specified period;

Any shortfall from compliance will be measured as compliance of 100% minus the shortfall's percentage share of MSSC.

If the recording of Contingency Reserve or MSSC is interrupted such that more than 50 percent of the samples within the clock hour are invalid data, then that clock hour is excluded from evaluation. If any portion of the Clock Hour is excluded by rule in Requirement R2, then compliance with that portion of the hour not excluded may be shown by either determination of the integrated value for that portion of the hour not excluded by the rule or an instantaneous value showing reserves any time during the excluded period.

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**Registered Entity Response (Required):**

**Compliance Narrative:**

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

**Evidence Requested<sup>1</sup>:**

<b>Provide the following evidence, or other evidence to demonstrate compliance.</b>
(R2) Dated documentation that demonstrates maintenance of Contingency Reserve, averaged over each Clock Hour, greater than or equal to the average Clock Hour of the Most Severe Single Contingency.
(R2.1) Dated documentation that demonstrates the Responsible Entity used its Contingency Reserve, for a period not to exceed 90 minutes, to mitigate the reliability concerns associated with Contingencies that are not Balancing Contingency Events; if applicable.
(R2.2) Dated documentation that demonstrates the Responsible Entity used its Contingency Reserve, for a period not to exceed 90 minutes, to respond to an Operating Instruction requiring the use of Contingency Reserve; if applicable.
(R2.3) Dated documentation that demonstrates the Responsible Entity used its Contingency Reserve for a period not to exceed 90 minutes, to resolve the exceedance of a System Operating Limit (SOL) or Interconnection Reliability Operation Limit (IROL) that requires the use of Contingency Reserve; if applicable.
(R2.4) Dated documentation that demonstrates the Responsible Entity was in a Contingency Reserve Restoration Period; if applicable.
(R2.5) Dated documentation that demonstrates the Responsible Entity was in a Contingency Event Recovery Period; if applicable.
(R2.6) Dated documentation that demonstrates the Responsible Entity was in an Energy Emergency Alert Level under which the Responsible Entity no longer had required Contingency Reserve available provided that the Responsible Entity made preparations for interruption of Firm Load to replace the shortfall of Contingency Reserve to avoid the uncontrolled failure of components or cascading outages of the Interconnection; if applicable.
(R2.6) Dated documentation that demonstrates the Responsible Entity made preparations for interruption of Firm Load to replace the shortfall of Contingency Reserve within 5 minutes from the time that the Energy Emergency Alert Level was declared; if applicable.

**Registered Entity Evidence (Required):**

<b>The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.</b>					
<b>File Name</b>	<b>Document Title</b>	<b>Revision or Version</b>	<b>Document Date</b>	<b>Relevant Page(s) or Section(s)</b>	<b>Description of Applicability of Document</b>

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**Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):**


**Compliance Assessment Approach Specific to BAL-002-2, R2**

***This section to be completed by the Compliance Enforcement Authority***

	(R2) For a sample of Clock Hours over the compliance monitoring period, review the dated documentation provided to validate the Responsible Entity maintained Contingency Reserve, averaged over each Clock Hour, greater than or equal to its average Clock Hour Most Severe Single Contingency.
	(R2) If the entity did not maintain appropriate Contingency Reserve, verify that the exception was appropriate per Requirements R2.1 through R2.6.
<b>Note to Auditor:</b> See SDT comments in M2 above regarding sampling and invalid data.	

**Auditor Notes:**

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**Additional Information:**

**Reliability Standard**

To be inserted by RSAW developer prior to posting of this RSAW associated with the enforceable date of this Reliability Standard.

**Sampling Methodology**

To be inserted by RSAW developer prior to posting of this RSAW associated with the enforceable date of this Reliability Standard, if applicable.

**Regulatory Language**

To be inserted by NERC Legal prior to posting of this RSAW associated with the enforceable date of this Reliability Standard.

**Selected Glossary Terms**

The following Glossary terms are provided for convenience only. Please refer to the NERC web site for the current enforceable terms.

This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.

**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 less than one minute.

- 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 electric 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 forced outage of transmission equipment that causes an unexpected imbalance between generation and load on the Interconnection.
- C. Sudden restoration of a load 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, that would result in the greatest loss (measured in MW) of resource output used by the Reserve Sharing Group (RSG) or a Balancing Authority that is not participating as a member of a RSG at the time of the event to meet firm system load 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 resulting 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, and occurring within a

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one-minute interval of the initial sudden decline in ACE based on EMS scan rate data. 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 beginning at the time that the resource output begins to decline within the first one-minute interval that defines a 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, the algebraic sum of the ACEs (or equivalent as calculated at such time of measurement) of the Balancing Authorities participating in the Reserve Sharing Group at the time of measurement.

**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). The capacity may be provided by resources such as Demand-Side Management (DSM), Interruptible Load and unloaded generation.

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**Revision History for RSAW**

Version	Date	Reviewers	Revision Description
1	09/08/2014	NERC Compliance, NERC Standards, RSAWTF	New Document
2	02/11/2015	NERC Compliance	Revised RSAW to align with revised Reliability Standard – Posting 6 January 2015

<sup>i</sup> Items in the Evidence Requested section are suggested evidence that may, but will not necessarily, demonstrate compliance. These items are not mandatory and other forms and types of evidence may be submitted at the entity's discretion.

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