

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

## **BAL-003-~~32~~ – Frequency Response and Frequency Bias Setting**

*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	FRSG	GO	GOP	IA	LSE	PA	PSE	RC	RP	RSG	TO	TOP	TP	TSP
<b>R1</b>	X		X <sup>3</sup>													
<b>R2</b>	X															
<b>R3</b>	X															
<b>R4</b>	X															
<b>R5</b>	X															
<b>R6</b>					X											
<b>R7</b>				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 version of the Reliability Standards, approved by the applicable governmental authority, relevant to its registration status.

The RSAW may provide 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. NERC and the Regional Entity using this RSAW reserve the right to request additional evidence from the registered entity that is not included in this RSAW. This RSAW may include excerpts from FERC Orders and other regulatory references which 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> The Balancing Authority is the responsible entity unless the Balancing Authority is a member of a Frequency Response Sharing Group, in which case, the Frequency Response Sharing Group becomes the responsible entity.

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**Findings**

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

Req.	Finding	Summary and Documentation	Functions Monitored
R1			
R2			
R3			
R4			
R5			
R6			
R7			

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)

DRAFT

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**R1 Supporting Evidence and Documentation**

- R1.** Each ~~Responsible Entity shall achieve an annual Frequency Response Sharing Group (FRSG) or Balancing Authority that is not a member of a FRSG shall achieve an annual~~ Frequency Response Compliance Measure (FRCM) (as calculated and reported in accordance with Attachment A) that is greater than or equal to 1 ~~or more negative than its Frequency Response Obligation (FRO)~~ to ensure that sufficient Frequency Response is provided by each ~~Responsible Entity FRSG or BA that is not a member of a FRSG~~ to maintain Interconnection Frequency Response equal to or more negative than the Interconnection Frequency Response Obligation.
  
- M1.** Each ~~Frequency Response Sharing Group or Balancing Authority that is not a member of a Frequency Response Sharing Group~~ Responsible Entity shall have evidence such as dated data plus documented formula in either hardcopy or electronic format that it achieved an annual FRCM (in accordance with the methods and data specified by the ERO in Attachment A) ~~with data from FRS Form 1 reported to the ERO as specified in Attachment A~~ that is greater than or equal to 1 ~~or more negative than its FRO~~ to demonstrate compliance with Requirement R1.

**Registered Entity Response (Required):**

**Question:** Is Balancing Authority a member of a FRSG?  Yes  No

If Yes, provide evidence of FRSG membership.

**Question:** Has the entity merged or transferred load or generation during the compliance monitoring period and notified the ERO of the change in footprint and corresponding changes in allocation?  Yes  No

If Yes, describe the load or generation that has been merged or transferred between Balancing Authorities. This question is for information purposes to assist the auditor in understanding if there should have been a corresponding change in the frequency response obligation, not to assess compliance with Requirement R1.

**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>i</sup>**

<b>Provide the following evidence, or other evidence to demonstrate compliance.</b>
<del>Form 1 and 2 used to calculate the FRM.</del>
Evidence of FRCM <u>greater than or</u> equal to <u>1</u> <del>or more negative than the FRO.</del>

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**Registered Entity Evidence (Required):**

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.

File Name	Document Title	Revision or Version	Document Date	Relevant Page(s) or Section(s)	Description of Applicability of Document

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


**Compliance Assessment Approach Specific to BAL-003-~~32~~, R1**

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

<p><del>Review Form 1 and v</del>Verify the entity achieves an annual FRCM that is <u>greater than or</u> equal to <u>1</u><del>or more</del> <u>negative than its FRO</u>.</p>
<p><b>Note to Auditor:</b> See BAL-003-2 Standard section <del>EF</del> regarding other associated documents for Frequency Response.</p> <p><u>The Balancing Authority is the responsible entity unless the Balancing Authority is a member of a Frequency Response Sharing Group, in which case, the Frequency Response Sharing Group becomes the responsible entity.</u></p>

**Auditor Notes:**

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**R2 Supporting Evidence and Documentation**

**R2.** Each Balancing Authority that is a member of a multiple Balancing Authority Interconnection and is not receiving Overlap Regulation Service and uses a fixed Frequency Bias Setting shall implement the Frequency Bias Setting determined in accordance with Attachment A, as validated by the ERO, into its Area Control Error (ACE) calculation during the implementation period specified by the ERO and shall use this Frequency Bias Setting until directed to change by the ERO.

**M2.** The Balancing Authority that is a member of a multiple Balancing Authority Interconnection and is not receiving Overlap Regulation Service shall have evidence such as a dated document in hard copy or electronic format showing the ERO validated Frequency Bias Setting was implemented into its ACE calculation within the implementation period specified or other evidence to demonstrate compliance with Requirement R2.

**Question:** Is the entity a member of a multiple Balancing Authority Interconnection AND is not receiving Overlap Regulation Service AND uses a fixed Frequency Bias Setting?

Yes  No

If Answer is No, how was this determination ascertained to demonstrate that the requirement is not applicable. If Yes, provide evidence as listed below.

[Redacted area]

**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.

[Redacted area]

**Evidence Requested:**

<b>Provide the following evidence, or other evidence to demonstrate compliance.</b>
Dated evidence demonstrating that ERO-validated Frequency Bias Setting was implemented into the entity's Energy Management System.

**Registered Entity Evidence (Required):**

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.

File Name	Document Title	Revision or Version	Document Date	Relevant Page(s) or Section(s)	Description of Applicability of Document

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

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**Compliance Assessment Approach Specific to BAL-003-~~32~~, R2**

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

	Verify the ERO-validated Frequency Bias Setting is implemented into the Balancing Authority's EMS so that it is used in the Balancing Authority ACE calculation:
	Within the implementation period specified by the ERO, and
	Utilizes this Frequency Bias Setting until directed to change by the ERO.

**Note to Auditor:**

**Auditor Notes:**

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**R3 Supporting Evidence and Documentation**

**R3.** Each Balancing Authority that is a member of a multiple Balancing Authority Interconnection and is not receiving Overlap Regulation Service and is utilizing a variable Frequency Bias Setting shall maintain a Frequency Bias Setting that is:

**3.1** Less than zero at all times, and

**3.2** Equal to or more negative than its Frequency Response Obligation when Frequency varies from 60 Hz by more than +/- 0.036 Hz.

**M3.** The Balancing Authority that is a member of a multiple Balancing Authority Interconnection, is not receiving Overlap Regulation Service and is utilizing variable Frequency Bias shall have evidence such as a dated report in hard copy or electronic format showing the average clock-minute average Frequency Bias Setting was less than zero and during periods when the clock-minute average frequency was outside of the range 59.964 Hz to 60.036 Hz was equal to or more negative than its Frequency Response Obligation to demonstrate compliance with Requirement R3.

**Question:** Is the entity a member of a multiple Balancing Authority Interconnection AND is not receiving Overlap Regulation Service AND uses a variable Frequency Bias Setting?

Yes  No

If Answer is No to any of the above, how was this determination ascertained to demonstrate that the requirement is not applicable. If Yes, provide evidence as listed 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:**

**Provide the following evidence, or other evidence to demonstrate compliance.**

A dated report in hard copy or electronic format showing the average clock-minute average Frequency Bias Setting was less than zero and for those periods when the clock-minute average frequency was outside of the range 59.964 Hz to 60.036 Hz was equal to or more negative than its Frequency Response Obligation.

**Registered Entity Evidence (Required):**

**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.**

File Name	Document Title	Revision or Version	Document Date	Relevant Page(s) or Section(s)	Description of Applicability of Document
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**Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):**


**Compliance Assessment Approach Specific to BAL-003-~~32~~, R3**

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

	Verify the entity maintains a variable Frequency Bias Setting that is:
	(3.1) Less than zero at all times (provided dated report showing the average clock-minute average Frequency Bias Setting was less than zero), and
	(3.2) Equal to or more negative than its Frequency Response Obligation when Frequency varies from 60 Hz by more than +/-0.036 Hz (provided dated report for time periods when the clock-minute average frequency was outside of the range 59.964 Hz to 60.036 Hz was equal to or more negative than its Frequency Response Obligation).

**Note to Auditor:** Consider sampling of average clock-minute average Frequency Bias Setting for periods outside the stated bandwidth to assess compliance.

**Auditor Notes:**

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**R4 Supporting Evidence and Documentation**

- R4.** Each Balancing Authority that is performing Overlap Regulation Service shall modify its Frequency Bias Setting in its ACE calculation, in order to represent the Frequency Bias Setting for the combined Balancing Authority Area, to be equivalent to either:
- The sum of the Frequency Bias Settings ~~as shown on FRS Form 1 and FRS Form 2 for the participating Balancing Authorities~~ as validated by the ERO for the participating Balancing Authorities, or
  - The Frequency Bias Setting ~~as validated by the ERO shown on FRS Form 1 and FRS Form 2~~ for the entirety of the participating Balancing Authorities' Areas.

**M4.** The Balancing Authority shall have evidence such as a dated operating log, database, or list in hard copy or electronic format showing that when it performed Overlap Regulation Service, it modified its Frequency Bias Setting in its ACE calculation as specified in Requirement R4 to demonstrate compliance with Requirement R4.

**Question:** Is the entity performing Overlap Regulation Service?

Yes  No

If Answer is No to any of the above, how was this determination ascertained to demonstrate that the requirement is not applicable. If Yes, provide evidence as listed 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:**

<b>Provide the following evidence, or other evidence to demonstrate compliance.</b>
Dated operating log, database, or list in hard copy or electronic format showing that when the Balancing Authority performed Overlap Regulation Service, that it modified its Frequency Bias Setting of its ACE calculation in its Energy Management System as specified in R4.

**Registered Entity Evidence (Required):**

**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.**

File Name	Document Title	Revision or Version	Document Date	Relevant Page(s) or Section(s)	Description of Applicability of Document
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**Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):**


**Compliance Assessment Approach Specific to BAL-003-~~32~~, R4**

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

	Verify that the applicable entity ACE calculation Frequency Bias Setting represents the Frequency Bias Setting for the combined Balancing Authority and is equivalent to either:
	The sum of the Frequency Bias Settings <del>as shown on FRS Form 1 and FRS Form 2 for the participating Balancing Authorities</del> as validated by the ERO <del>for the participating Balancing Authorities</del> , or
	The Frequency Bias Setting <del>as validated by the ERO</del> <del>shown on FRS Form 1 and FRS Form 2</del> for the entirety of the participating Balancing Authorities' Areas.
<b>Note to Auditor:</b> See the <del>associated documents in Section E of the Standard</del> <del>attached Implementation Plan</del> <del>Timeline in the Additional Information section of this RSAW</del> for more details.	

**Auditor Notes:**

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**R5 Supporting Evidence and Documentation**

**R5.** Each Balancing Authority shall develop, review and maintain annually, and implement an Operating Process as part of its Operating Plan to determine its Frequency Response requirements and make preparations to have Frequency Response equal to or greater than (in absolute value) the Balancing Authority's Frequency Response Obligation available for maintaining system reliability.

- M5.** The Balancing Authority will have the following documentation to show compliance with Requirement R5:
- o a dated Operating Process;
  - o evidence to indicate that the Operating Process has been reviewed and maintained annually; and
  - o evidence, such as Operating Plans or other operator documentation, that demonstrate that the entity determines in its Operating Plans its Frequency Response available and that Frequency Response is equal to or greater than (in absolute value) its Frequency Response Obligation.

**Registered Entity Response (Required):**

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**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:**

**Provide the following evidence, or other evidence to demonstrate compliance.**

The applicable Operating Plan and dated evidence that the applicable Operating Process is reviewed and maintained annually.

**Registered Entity Evidence (Required):**

**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.**

<u>File Name</u>	<u>Document Title</u>	<u>Revision or Version</u>	<u>Document Date</u>	<u>Relevant Page(s) or Section(s)</u>	<u>Description of Applicability of Document</u>

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


**Compliance Assessment Approach Specific to BAL-003-3, R5**

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

	<u>Verify the applicable Operating Plan contains the applicable Operating Process.</u>
	<u>Verify the applicable Operating Plan is reviewed and maintained annually.</u>

**Auditor Notes:**

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**R6 Supporting Evidence and Documentation**

**R6.** Each Generator Operator shall operate each generating unit/generating facility that is connected to the interconnected transmission system with frequency responsive controls in service when the generating

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unit/generating facility is online and released for dispatch<sup>4</sup>, unless the Generator Operator has notified the Balancing Authority as soon as practical but within 30 minutes of the discovery of a status change (in service, out of service) of a Governor.

**M6.** The Generator Operator shall have evidence to show that it notified its associated Balancing Authority any time it failed to operate a generator in the frequency responsive mode when the generating facility was online and released for dispatch.

**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:**

**Provide the following evidence, or other evidence to demonstrate compliance.**

Dated evidence to show that the entity notified its associated Balancing Authority any time it failed to operate a generator in the frequency responsive mode when the generating facility was online and released for dispatch.

**Registered Entity Evidence (Required):**

**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.**

<u>File Name</u>	<u>Document Title</u>	<u>Revision or Version</u>	<u>Document Date</u>	<u>Relevant Page(s) or Section(s)</u>	<u>Description of Applicability of Document</u>

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


**Compliance Assessment Approach Specific to BAL-003-3, R6**

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

Verify the entity operated each of (or a sample of) its generating unit/generating facilities that are connected to the interconnected transmission system with frequency responsive controls in service

<sup>4</sup> That the generator is not being operated in start-up, shutdown, or testing mode pursuant to a Real-time communication or a procedure that was previously provided to the Balancing Authority.

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when the generating unit/generating facility was online and released for dispatch, unless the Generator Operator notified the Balancing Authority as soon as practical but within 30 minutes of the discovery of a status change (in service, out of service) of a Governor.

**Auditor Notes:**

**R7 Supporting Evidence and Documentation**

**R7.** Each Generator Owner shall have its Governor capability on each resource set with a droop of no more than five (5) percent and a deadband not more than 0.036 Hz. Exceptions to these setting requirements are allowed if the Generator Owner has notified its Balancing Authority that:

- The droop setting is greater than five (5) percent or the deadband is greater than 0.036 Hz; or
- The resource as designed does not have frequency response capability.

**M7.** Each Generator Owner shall have evidence that it set its Governor in accordance with Requirement R7. Examples of evidence include, but are not limited to, Governor test reports, Governor setting sheets, performance monitoring reports or documentation that shows the Generator Owner has provided information to the Balancing Authority information to address the exceptions allowed.

**Question:** Has the entity notified its Balancing Authority for exceptions to these setting requirements?

Yes  No

**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:**

**Provide the following evidence, or other evidence to demonstrate compliance.**

Evidence that the entity has its Governor capability on each resource set with a droop of no more than five (5) percent and a deadband not more than 0.036 Hz unless an exception applies.

When applicable, dated evidence of notification of exceptions given to the entity’s Balancing Authority for each exception to the setting requirements of R7.

When applicable, identification of which resources have droop settings greater than five (5) percent or deadbands greater than 0.036 Hz.

When applicable, identification of which resources do not have frequency response capabilities.

**Registered Entity Evidence (Required):**

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**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.**

<u>File Name</u>	<u>Document Title</u>	<u>Revision or Version</u>	<u>Document Date</u>	<u>Relevant Page(s) or Section(s)</u>	<u>Description of Applicability of Document</u>

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


**Compliance Assessment Approach Specific to BAL-003-3, R7**

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

	<u>Verify that, unless an exception was notified to its Balancing Authority, the entity has its Governor capability on each resource set with a droop of no more than five (5) percent and a deadband not more than 0.036 Hz.</u>
	<u>Verify that, for every exception that was notified to its Balancing Authority, one of the following is true: the droop setting is greater than five (5) percent or the deadband is greater than 0.036 Hz; or the resource as designed does not have frequency response capability.</u>

**Note to Auditor:**

**Auditor Notes:**

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### **Additional Information:**



BAL-003-2.pdf

**(final PDF to be posted when RSAW finalized)**

### **Reliability Standard**

In addition to the Reliability Standard, there is background information available on the NERC Web Site under *Project 2007-12 Frequency Response*.

Capitalized terms in the Reliability Standard refer to terms in the NERC Glossary, which may be found on the NERC Web Site.

### **Sampling Methodology**

Sampling is essential for auditing compliance with NERC Reliability Standards because it is not always possible or practical to test 100% of either the equipment, documentation, or both, associated with the full suite of enforceable standards. The Sampling Methodology Guidelines and Criteria (see NERC website), or sample guidelines, provided by the Electric Reliability Organization help to establish a minimum sample set for monitoring and enforcement uses in audits of NERC Reliability Standards.

### **Regulatory Language (to be updated before Final Posting)**

#### **Regulatory Background**

BAL-003-0 was approved by FERC in Order No. 693 on March 16, 2007. FERC issued directives to NERC to develop a modification to BAL-003-0 that: (1) includes Levels of Non-Compliance; (2) determines the appropriate periodicity of frequency response surveys necessary to ensure that Requirement R2 and other requirements of the Reliability Standard are being met, and to modify measure M1 based on that determination and (3) defines the necessary amount of Frequency Response needed for Reliable Operation for each balancing authority with methods of obtaining and measuring that the frequency response is achieved.<sup>5</sup> In Order No. 713, FERC approved an interpretation of Requirement 3 clarifying that all balancing authorities operate automatic generation control on tie-line frequency bias as its underlying control mode, unless to do so is adverse to system or interconnection reliability.<sup>6</sup>

In an order dated May 21, 2009, FERC approved an additional interpretation clarifying that a balancing authority that uses a variable bias option under Requirement 2 must also follow Requirement 5.<sup>7</sup>

In Order 794, FERC recognized that BAL-003-1 addressed certain directives from Order no. 693 and closed a reliability gap.<sup>8</sup>

<sup>5</sup> *Mandatory Reliability Standards for the Bulk-Power System*, 118 FERC ¶ 61,218 at P375 (March 16, 2007) (“Order No. 693”).

<sup>6</sup> *Modification of Interchange and Transmission Loading Relief Reliability Standards; and Electric Reliability Organization Interpretations of Specific Requirements of Four Reliability Standards*, 124 FERC, ¶ 61,071 at P21 (July 21, 2008) (“Order 713”).

<sup>7</sup> *Electric Reliability Organization Interpretations of Specific Requirements of Frequency Response and Voltage and Reactive Control Reliability Standards*, 127 FERC ¶61,158 at P14 (May 21, 2009).

<sup>8</sup> *Frequency Response and Frequency Bias Setting Reliability Standard*, 146 FERC ¶61,024 (January 16, 2014) (“Order No. 794”).



FERC approved BAL-003-2 in a delegated letter order in Docket No. RD20-9-000 on July 15, 2020. The modifications to the Standard were concentrated in Attachment A (BAL-003-2 Frequency Response and Frequency Bias Setting Standard Supporting Document), which addresses the establishment of the Interconnection Frequency Response Obligation (IFRO). BAL-003-2 modifies the method for calculating IFROs in each Interconnection so that they are calculated uniformly based on a new resource loss protection criteria.

## **FERC Orders**

### **Letter Order Approving BAL-003-2**

<https://www.nerc.com/FilingsOrders/us/FERCOrdersRules/Letter%20Order%20Approving%20BAL-003-2.pdf>

In approving the Standard, FERC noted that BAL-003-2 modifies the method for calculating IFROs in each Interconnection so that they are calculated uniformly based on a new resource loss protection criteria.

### **Order No. 794**

<http://www.nerc.com/FilingsOrders/us/FERCOrdersRules/Frequency%20Response%20and%20Frequency%20Bias%20Setting%20Reliability%20Standard.pdf>

P22 In approving the Standard, FERC stated “The Reliability Standard (BAL-003-1) establishes a minimum Frequency Response Obligation for each balancing authority; provides a uniform calculation of frequency response; establishes Frequency Bias Settings that are closer to actual balancing authority frequency response; and encourages coordinated automatic generation control operation. The Reliability Standard addresses an existing gap in reliability, as these matters are either not covered, or not adequately addressed, in any currently-effective Reliability Standard.”

### **Electric Reliability Organization Interpretations of Specific Requirements of Frequency Response and Bias and Voltage and Reactive Control Reliability Standards**

[http://www.nerc.com/FilingsOrders/us/FERCOrdersRules/BAL\\_VAR\\_ Interpretation\\_Order-05212009.pdf](http://www.nerc.com/FilingsOrders/us/FERCOrdersRules/BAL_VAR_ Interpretation_Order-05212009.pdf)

P 14 In approving the interpretation, FERC stated “...NERC’s interpretation affirms that a balancing authority that uses the variable bias option under Requirement R2 must also follow Requirement R5.”

### **Order No. 713**

[http://www.nerc.com/FilingsOrders/us/FERCOrdersRules/Order\\_713\\_Modified-INT\\_and\\_TLR-Stds-07212008.pdf](http://www.nerc.com/FilingsOrders/us/FERCOrdersRules/Order_713_Modified-INT_and_TLR-Stds-07212008.pdf)

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P 21 In approving the Interpretation, FERC stated “The ERO’s interpretation of BAL-003-0, Requirement R3 is appropriate because it maintains the goal of Requirement R3 by obligating the balancing authority to operate automatic generation control on tie-line frequency bias as its underlying control mode, unless to do so is adverse to system or interconnection reliability.”

### **Order No. 693**

<http://www.nerc.com/FilingsOrders/us/FERCOrdersRules/ORDER%20693.pdf>

P 370 In approving the Standard, FERC explained “A balancing authority must use a frequency bias of at least one percent and they must have a frequency bias that is as close to, or greater than, the balancing authority’s actual frequency response.”

### **Selected Glossary Terms**

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

### **New or Modified Definitions**

The following definitions shall become effective when BAL-003-1 Requirements R1, R2, R3, and R4 become effective:

**Frequency Response Measure (FRM):** The median of all the Frequency Response observations reported annually by Balancing Authorities for frequency events specified by the ERO. This will be calculated as MW/0.1Hz.

**Frequency Response Obligation (FRO):** The Balancing Authority’s share of the required Frequency Response needed for the reliable operation of an Interconnection. This will be calculated as MW/0.1Hz.

**Frequency Bias Setting:** A number, either fixed or variable, usually expressed in MW/0.1 Hz, included in a Balancing Authority’s Area Control Error equation to account for the Balancing Authority’s inverse Frequency Response contribution to the Interconnection, and discourage withdrawal through secondary control systems.

**Frequency Response Sharing Group (FRSG):** A group, whose members consist of two or more Balancing Authorities that collectively maintain, allocate, and supply operating resources required to jointly meet the Frequency Response Obligations of its members.

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**Revision History for RSAW**

Version	Date	Reviewers	Revision Description
1	<del>69</del> /25/202 <del>20</del>	NERC Compliance Assurance, RSAW Task Force	New Document

<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.