

## Summary of Changes

### SAR-011 Revisions to Regional Standard BAL-001-TRE-1

#### Draft Standard

Section	Proposed Change	Rationale
Header	Changed from BAL-001-TRE-1 to BAL-001-TRE-2	The version of the standard is changing.
Standard Version	Changed from BAL-001-TRE-1 to BAL-001-TRE-2	The version of the standard is changing.
Background	Changed “Section 5.9” to Section 8.5”.	This information moved to a different section in the Protocols.
Background	Added (FME) after Frequency Measurable Event	This change shows that the rest of the document will use the acronym FME.
Background	Capitalized “regional standard”.	The term “Regional Standard” is defined in the Texas RE Standard Development Process document.
Background	Added (PFR) after Primary Frequency Response.	This change shows that the rest of the document will use the acronym PFR.
Effective Date	Changed to “See implementation plan”	This is consistent with the national standards. There is a separate implementation plan document.
Requirement 6.2 Table	Remove Nuclear, Coal and Lignite <sub>1</sub> from the table	These are fuel types. Plants with these fuel types operate as steam turbines.
<a href="#">Requirement 6.2 Table</a>	<a href="#">Removed Wind Powered Generator from the table</a>	<a href="#">Wind Powered Generator is included in Variable Renewable (Non-Hydro)</a>
Requirement 6.2 Table	Changed “Steam Turbine (Simple Cycle)” to “Steam Turbine”	The original BAL-001-TRE drafting team accounted for the lack of Primary Frequency Response (PFR) from the steam turbines in a combined cycle resource train by requiring an overall 5.78% PFR performance for the entire train. This change aligns the standard’s requirements with current operational practices. As the Balancing Authority for the ERCOT Region, ERCOT has already used its directive authority

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		under R6 of the standard to explicitly exempt Generator Operators with steam turbines in combined-cycle trains from the droop and deadband settings in R6.1 and R6.2, pending a clarification to the standard. See ERCOT Market Notice W-C050418-01 (May 4, 2018).
Requirement 6.2 Table	Removed “Steam Turbine (Combined Cycle)”	The original BAL-001-TRE drafting team accounted for the lack of Primary Frequency Response (PFR) from the steam turbines in a combined cycle resource train by requiring an overall 5.78% PFR performance for the entire train. This change aligns the standard’s requirements with current operational practices. As the Balancing Authority for the ERCOT Region, ERCOT has already used its directive authority under R6 of the standard to explicitly exempt Generator Operators with steam turbines in combined-cycle trains from the droop and deadband settings in R6.1 and R6.2, pending a clarification to the standard. See ERCOT Market Notice W-C050418-01 (May 4, 2018).
<a href="#">Requirement 6.2 Table</a>	<a href="#">Revised “Renewable (Non-Hydro)” to “Variable Renewable (Non-Hydro)”</a>	<a href="#">This change indicates that all non-hydro renewable resources, including wind, are included.</a>
Requirement 6.2 asterisk	Revised the asterisk from “Steam Turbines of combined cycle resources are required to comply with Requirements R6.1, R6.2, and R6.3. Compliance with Requirements R9 and R10 will be determined through evaluation of the combined cycle facility using an expected performance droop of 5.78%.” to “Requirements R6.1, R6.2, and R6.3 are not	The original BAL-001-TRE drafting team accounted for the lack of Primary Frequency Response (PFR) from the steam turbines in a combined cycle resource train by requiring an overall 5.78% PFR performance for the entire train. This change aligns the standard’s requirements with current operational practices. As the Balancing Authority for the ERCOT Region, ERCOT has already used its directive authority

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	applicable to steam turbine(s) of a combined cycle resource.”	under R6 of the standard to explicitly exempt Generator Operators with steam turbines in combined-cycle trains from the droop and deadband settings in R6.1 and R6.2, pending a clarification to the standard. See ERCOT Market Notice W-C050418-01 (May 4, 2018).
Requirement R6.2 asterisk	Removed this from the asterisk: “Compliance with Requirements R9 and R10 will be determined through evaluation of the combined cycle facility using an expected performance droop of 5.78%.”	This exists in Section B.R2.1. The intent is to indicate the BA will evaluate performance according to a certain value, which is stated in Section B.R2.1.
M6	Revised “governer” to “governor”.	This change corrects the spelling.
Requirement R9.3	Added “by the BA”	This change specifies that the BA is the entity responsible for review and approval of exclusion requests for a generating unit/generating facility’s initial Primary Frequency Response performance during an FME.
Requirement R9.3	Added “but are not limited to”	There are several legitimate operating conditions that may support exclusion aside from the 2 examples.
Requirement R9.3, second bullet	Changed Compliance Enforcement Authority to BA	This change reflects current processes. The BA is the entity that may request raw data from the GO.
M9	Changed “should be excluded” to “was excluded”.	This indicates the performance was already excluded from the rolling average calculation.
Requirement R10.3	Added “by the BA”	This change specifies that the BA is the entity responsible for review and approval of exclusion requests for a generating unit/generating facility’s initial Primary Frequency Response performance during an FME.

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Requirement R10.3	Added “but are not limited to”	There are several legitimate operating conditions that may support exclusion aside from the 2 examples.
Requirement R10.3, second bullet	Changed Compliance Enforcement Authority to BA	This change reflects current processes. The BA is the entity that may request raw data from the GO.
M10	Changed “should be excluded” to “was excluded”.	This indicates the performance was already excluded from the rolling average calculation.
C. 1. Compliance Enforcement Authority	Changed “Texas Reliability Entity” to “Texas Reliability Entity, Inc.”	Texas Reliability Entity, Inc. is the full, legal name.
C. 2. 2.1	Added (s) after corrective action.	There could be more than one corrective action to meet requirements R9 and R10.
C. 3. 3.1, First Bullet	Changed Frequency Measurable Event to FME.	It was established during the Background section that FME is the acronym for Frequency Measurable Event.
C. 3. 3.1, Fourth Bullet	Changed “The BA shall retain all data and calculations relating to the Interconnection’s Frequency Response, and all evidence of actions taken to increase the Interconnection’s Frequency Response, since its last compliance audit for Requirements R4 and R5, Measures M4 and M5.” To “The BA shall retain all data and calculations relating to the Interconnection’s combined Frequency Response performance, and all evidence of actions taken to increase the Interconnection’s combined Frequency Response performance, since its last compliance audit for Requirements R4 and R5, Measures M4 and M5.”	This indicates the evidence for the performance of Frequency Response.

<b>Section</b>	<b>Proposed Change</b>	<b>Rationale</b>
E. Associated Documents	Removed “1. Attachment 1 – Implementation Plan”	This was the implementation plan for BAL-001-TRE-1. It is no longer relevant.
E. Associated Documents	Changed “2. Attachment 2 – Primary Frequency Response Reference Document, including Flow Charts A and B” to “1. Attachment 1 – Primary Frequency Response Reference Document, including Flow Charts A and B”	Moved the reference document up to account for the removal of the implementation plan.
Version History	Added 2 with the changes being proposed.	This shows the changes being made at this time.

### **Primary Frequency Response Reference Document**

Attachment 1	Changed from Attachment 2 to Attachment 1.	This change is in accordance with the change to Section E of the standard.
Attachment 1 Title	Changed from BAL-001-TRE-1 to BAL-001-TRE-2	The version of the standard is changing.
Attachment 1 Header	Changed from BAL-001-TRE-1 to BAL-001-TRE-2	The version of the standard is changing.
I. Introduction	Changed “will be” to “is”. Removed the second “will be” and made modifications plural.	This document is currently being used so changed the tense to present.
Requirement R9.3	Added “by the BA”	This reflects the changes made to the standard requirement language.
Requirement R9.3	Added “but are not limited to”	This reflects the changes made to the standard requirement language.
Requirement R9.3	Changed Compliance Enforcement Authority to BA	This reflects the changes made to the standard requirement language.
Initial Frequency Response Performance	Hyphenated 12-month and 8-event	Compound adjectives that precede a noun should be hyphenated.

Calculation Methodology		
Initial Frequency Response performance requirement	Capitalized "Where"	Where should be capitalized because it is at the beginning of the line.
Initial Frequency Response performance requirement	Changed P.U.PFRResource to P.U.PFR <sub>Resource</sub>	Resource should be a subscript. This is consistent with the formula.
Actual Primary Frequency Response (APFR <sub>adj</sub> )	Capitalized "Where"	Where should be capitalized because it is at the beginning of the line.
EPFR <sub>final</sub> for Steam Turbine	Capitalized "Where"	Where should be capitalized because it is at the beginning of the line.
EPFR <sub>final</sub> for Other Generating Units/Generating Facilities	Capitalized "Where"	Where should be capitalized because it is at the beginning of the line.
Requirement R10.3	Added "by the BA"	This reflects the changes made to the standard requirement language.
Requirement R10.3	Added "but are not limited to"	This reflects the changes made to the standard requirement language.
Requirement R10.3	Changed Compliance Enforcement Authority to BA	This reflects the changes made to the standard requirement language.
Sustained Primary Frequency Response Performance Calculation Methodology	Hyphenated 12-month and 8-event	Compound adjectives that precede a noun should be hyphenated.
Actual Sustained Primary Frequency	Capitalized "Where" and "And"	Where and And should be capitalized because they are at the beginning of the line.

Response (ASPFR) Calculations		
EPFR <sub>final</sub> for Steam Turbine	Capitalized "Where" and "And"	Where and And should be capitalized because they are at the beginning of the line.
EPFR <sub>final</sub> for Other Generating Units/Generating Facilities	Capitalized "Where"	Where should be capitalized because it is at the beginning of the line.