

Standard Drafting Team's Responses to Comments

Comment Period: May 6 – June 5, 2019

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

Question 1	Draft Regional Standard - Do you agree with the changes to Requirement R6 to remove the applicability to steam turbine(s) of a combined cycle resource?
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Answers	Frequency
Yes	3
No	None
No Answer	2

Commenter	Answer	Comment	SDT Response
Deb Reichard Steitz, Buffalo Gap Wind Farm, LLC.	[none]	[none]	
Thomas Foltz, American Electric Power	Yes	[none]	
Daniel Gacek, Exelon	Yes	NERC has followed the lead of CIGRE (International Council on Large Electric Systems (French: Conseil International des Grands Réseaux Électriques, CIGRÉ)) and other expertise in the grid modeling sciences regarding the effective contribution of a combined cycle steam turbine governor during frequency measurable events. They have concluded that the MW yield from a steam turbine in combined cycle is negligible in most circumstances, particularly in the short term where frequency response is	Thank you for your comment.

		relevant. The change reflected in the subject document reflects this technical reality.	
Brandon Gleason, ERCOT	Yes	[none]	
Pamela Hunter	[none]	[none]	

Question 2	Draft Regional Standard – Do you agree with the revisions to Requirements R9 and R10 for the Balancing Authority to request data from the GO?
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Answers	Frequency
Yes	3
No	None
No Answer	2

Commenter	Answer	Comment	SDT Response
Deb Reichard Steitz, Buffalo Gap Wind Farm, LLC.	[none]	[none]	N/A
Thomas Foltz, American Electric Power	Yes	[none]	N/A
Daniel Gacek, Exelon	Yes	[none]	N/A
Brandon Gleason, ERCOT	Yes	[none]	N/A
Pamela Hunter	[none]	[none]	N/A

Question 3	Draft Reference Document – The standard drafting team made changes to the attached reference document consistent with the changes in the draft standard, including some errata changes. Do you agree with the changes to the draft reference document?
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Answers	Frequency
Yes	3
No	None
No Answer	2

Commenter	Answer	Comment	SDT Response
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Deb Reichard Steitz, Buffalo Gap Wind Farm, LLC.	[none]	[none]	N/A
Thomas Foltz, American Electric Power	Yes	[none]	N/A
Daniel Gacek, Exelon	Yes	[none]	N/A
Brandon Gleason, ERCOT	Yes	[none]	N/A
Pamela Hunter	[none]	[none]	N/A

Question 4 | **Implementation Plan - Do you agree Regional Standard BAL-001-TRE-2 should be effective the first day of the first calendar quarter after the effective date of the applicable governmental authority's order approving the standard?**

Answers	Frequency
Yes	3
No	None
No Answer	2

Commenter	Answer	Comment	SDT Response
Deb Reichard Steitz, Buffalo Gap Wind Farm, LLC.	[none]	[none]	N/A
Thomas Foltz, American Electric Power	Yes	[none]	N/A
Daniel Gacek, Exelon	Yes	[none]	N/A
Brandon Gleason, ERCOT	Yes	[none]	N/A
Pamela Hunter	[none]	[none]	N/A

Question 5 | **Do you have any additional comments for the standard drafting team?**

Answers	Frequency
Yes	3
No	2
No Answer	None

Commenter	Answer	Comment	SDT Response
<p>Deb Reichard Steitz, Buffalo Gap Wind Farm, LLC.</p>	<p>Yes</p>	<p>BAL-001-TRE-2 Draft Standard – Redline Table 6.2 strikes “Wind-Powered Generator”. This change is not noted on the BAL-001-TRE-2 Summary of Changes with Rationale. Confirming, does this mean that Wind-Powered Generator GO is exempt from R6?</p>	<p>Wind-Powered Generators and Solar Generators are now covered under the type “Variable Renewable” in Table 6.2. They are not exempt from Requirement R6.</p> <p>The SDT revised the Summary of Changes document to capture this change.</p>
<p>Thomas Foltz, American Electric Power</p>	<p>Yes</p>	<p>AEP appreciates the efforts of the SAR-011 drafting team and offers the following suggestions for helping shape the scope and direction eventually chosen for future SARs involving BAL-001-TRE. We believe opening the standard for revision also allows an opportunity to make improvements to the attachments as well. We suggest pursuing such revisions within the standards development process itself rather than doing so independently.</p> <p>Associated Attachments:</p> <ul style="list-style-type: none"> * More detailed instructions should be included for calculating the K-factor for throttle pressure change, due to steam turbine control valve response to FME. * Attachments could benefit from some general clean up using the latest WORD equation tools to replace the pasted 	<p>Thank you for your comment. The SDT notes these suggestions for consideration in the next SAR involving BAL-001-TRE.</p> <p>To make changes to the Primary Frequency Response Reference Document (Attachment 1), please submit a revisions request per the Revision Process noted in the Attachment.</p>

		<p>graphics representing equations.</p> <p>* Improve the load ramp calculation in the pre-event period to ignore normal variation in MW output from resources.</p> <p>Standard:</p> <p>* Add a requirement for the BA to maintain tighter control of frequency (two standard deviations of frequency data within the maximum deadband for governors) through LFC/AGC to minimize the impact on generators.</p> <p>* Modify R9 and R10 to explicitly allow the BA to exempt a generator whose load ramp is interrupted during the FME period.</p> <p>* Modify R2 to allow expected droop performance to be based on the actual combined cycle resource configuration at the time of the FME.</p>	
Daniel Gacek, Exelon	No		N/A
Brandon Gleason, ERCOT	No		N/A
Pamela Hunter	Yes	<p>The change indicates “regional standard” is capitalized in the Background section, but it is not capitalized in the last paragraph.</p> <p>The expected performance droop of 5.78% shown in Requirement R2, section 2.1 is not valid for all configurations of combined cycle</p>	<p>Thank you for your comment. The SDT has capitalized “regional standard” in the last paragraph of the background section.</p> <p>That is correct. The 5.78% droop performance criteria was based on the</p>

		<p>units and on all sizes of gas turbine generators and steam turbine generators used. This value is valid for only a small subset of possible unit sizes and configurations (e.g. 1-on-1, 2-on-1, 3-on-1, 4-on-1, etc.).</p>	<p>aggregated results of a field trial using multiple combined units under various configurations. This is explained in footnote 2 in the Primary Frequency Response Reference Document (Attachment 1).</p> <p>To date, ERCOT has not received an exemption request stating the combined-cycle configuration caused a unit to fail.</p>
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