

**Project 2009-20: Interpretation or BAL-003-0 for Energy Mark, Inc.
 Consideration of Comments for Initial Ballot (November 11–December 7, 2009)**

Summary Consideration:

The majority of comments centered on the belief that the responses provided for parts 1 and 2 of question 3 were confusing and contradictory. The drafting team explains that the two parts were asking basically the same question but did so in different references. Part 1 was asking about comparing measured Frequency Response and Frequency Bias, which is a mathematical comparison where sign convention was appropriate. Part 2 was more specific to the comparison needed to ensure that Frequency Bias Setting was as close as practical, or greater than, the Balancing Authority's Frequency Response and that Requirement 2 of BAL-003 mandates that the absolute value of Frequency Bias Setting be as close as practical, or greater than, the Balancing Authority's Frequency Response. The drafting team explains it was attempting to point out that sign convention was not consistent, as the commenters were pointing out, and that these comments will be forwarded on to the standard drafting team assigned to the rewrite of BAL-003.

A few commenters indicated there is a lack of detail within the present standard. The drafting team agrees and will present these comments to the standard drafting team assigned to the rewrite of BAL-003.

If you feel that the drafting team overlooked your comments, please let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski, at 609-452-8060 or at gerry.adamski@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.¹

Voter	Entity	Segment	Vote	Comment
Louise McCarren	Western Electricity Coordinating Council	10	Negative	As worded, the interpretation response for Clarification 3 is confusing and seems to contradict itself. The first sentence indicates the comparison should be made using the TYPICAL SIGN CONVENTION and the second sentence indicates that R2 mandates the ABSOLUTE VALUE of Frequency Bias be as close as practical to the ABSOLUTE VALUE of Frequency Response. Rather than providing clarity on the question, it adds to the confusion. The following language from the proposed interpretation should be deleted\ "1) Frequency Response and Frequency Bias should be compared with their typical sign convention and not an absolute value." The remainder of the proposed response would then correctly address the requested interpretation regarding R2. The remainder of the interpretation appears appropriate and with the suggested change above would be acceptable.

¹ The appeals process is in the Reliability Standards Development Procedure: http://www.nerc.com/files/RSDP_V6_1_12Mar07.pdf.

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<p>Response: The drafting team thanks you for your comment. Parts 1 and 2 of clarification 3 are asking basically the same question but do so in different references. Part 1 asks about comparing measured Frequency Response and Frequency Bias and for the proper method for this comparison. The drafting team interpreted this as a mathematical comparison where sign convention is appropriate. The drafting team response in Part 2 is more specific to the comparison needed to ensure that Frequency Bias Setting is as close as practical, or greater than, the Balancing Authority's Frequency Response. Requirement 2 requires that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the estimated Frequency Response per 0.1 Hz change. The drafting team is attempting to point out that sign convention is not consistent, as you have also pointed out. These comments will be forwarded to the standard drafting team assigned to rewriting BAL-003.</p>				
<p>Tim Kelley</p> <p>James Leigh-Kendall</p> <p>Mike Ramirez</p> <p>Bethany Wright</p>	<p>Sacramento Municipal Utility District</p>	<p>1</p> <p>3</p> <p>4</p> <p>5</p>	<p>Negative</p>	<p>SMUD believes that the response to Clarification 3 Item 1 could be interpreted to conflict with response to Item 2 and perhaps should be reworded. We believe that the responses to Clarification 3 should reinforce the significance of the words "or greater than" in Requirement R2 and that the comparison between the Frequency Bias Setting and the average Frequency Response in Requirement R2 must be made comparing the absolute values of the two terms. We suggest that the response to Clarification 3 Item 1 should be restated in a manner to better align with the response in Item 2.</p>
<p>Response: The drafting team thanks you for your comment. Parts 1 and 2 of clarification 3 are asking basically the same question but do so in different references. Part 1 asks about comparing measured Frequency Response and Frequency Bias and for the proper method for this comparison. The drafting team interpreted this as a mathematical comparison where sign convention is appropriate. The drafting team response in Part 2 is more specific to the comparison needed to ensure that Frequency Bias Setting is as close as practical, or greater than, the Balancing Authority's Frequency Response. Requirement 2 requires that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the estimated Frequency Response per 0.1 Hz change. The drafting team is attempting to point out that sign convention is not consistent, as you have also pointed out. These comments will be forwarded to the standard drafting team assigned to rewriting BAL-003.</p>				
<p>Terry Harbour</p>	<p>MidAmerican Energy Co.</p>	<p>1</p>	<p>Negative</p>	<p>This interpretation could inappropriately pull in distribution protection systems (such as 13 kV breakers) on the low side of a transformer. The standards should continue to focus on bulk power transport systems rated at 100 kV and greater.</p>

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<p>Response: The drafting team is unsure of what you are referencing in your comment. BAL-003 does not differentiate between voltages.</p>				
Gregory L Pieper	Xcel Energy, Inc.	1	Negative	<p>Xcel Energy believes that the response to Clarification 3 Item 1 could be interpreted to conflict with response to Item 2 and perhaps should be reworded. We believe that the responses to Clarification 3 should reinforce the significance of the words “or greater than” in Requirement R2 and that the comparison between the Frequency Bias Setting and the average Frequency Response in Requirement R2 must be made comparing the absolute values of the two terms. We suggest that the response to Clarification 3 Item 1 should be restated in a manner to better align with the response in Item 2 as follows: 1) “With respect to the comparison of values in Requirement R2, though Frequency Response and the Frequency Bias Setting are negative terms by design, selecting a Frequency Bias Setting as close as practical to, or greater than, the Frequency Response requires comparison of the absolute values of those terms so that AGC in Tie Line Bias mode is less likely to move resources in a manner that would withdraw the primary response provided for a Frequency excursion.” Though the response to Clarification 3 Item 2 is “Yes”, it would be beneficial to the industry if the response fully repeated the clarification requested: 2) “Yes, Requirement R2 mandates that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the Frequency Response.”</p>
Michael Ibold		3		
David F. Lemmons		6		
<p>Response: The drafting team thanks you for your comment. Parts 1 and 2 of clarification 3 are asking basically the same question but do so in different references. Part 1 asks about comparing measured Frequency Response and Frequency Bias and for the proper method for this comparison. The drafting team interpreted this as a mathematical comparison where sign convention is appropriate. The drafting team response in Part 2 is more specific to the comparison needed to ensure that Frequency Bias Setting is as close as practical, or greater than, the Balancing Authority’s Frequency Response. Requirement 2 requires that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the estimated Frequency Response per 0.1 Hz change. The drafting team is attempting to point out that sign convention is not consistent, as you have also pointed out. These comments will be forwarded to the standard drafting team assigned to rewriting BAL-003.</p>				
Liam Noailles	Northern States Power Co.	5	Negative	<p>Xcel Energy believes that the response to Clarification 3 Item 1 could be interpreted to conflict with response to Item 2 and perhaps should be reworded. We believe that the responses to Clarification 3 should reinforce the significance of the words “or greater than” in Requirement R2 and that the comparison between the Frequency Bias Setting and the average Frequency Response in Requirement R2 must be made comparing the absolute values of the two terms. We suggest that the response to Clarification 3 Item 1 should be restated in a manner to better align with the response in Item 2 as follows: 1) “With respect to</p>

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				<p>the comparison of values in Requirement R2, though Frequency Response and the Frequency Bias Setting are negative terms by design, selecting a Frequency Bias Setting as close as practical to, or greater than, the Frequency Response requires comparison of the absolute values of those terms so that AGC in Tie Line Bias mode is less likely to move resources in a manner that would withdraw the primary response provided for a Frequency excursion." Though the response to Clarification 3 Item 2 is "Yes", it would be beneficial to the industry if the response fully repeated the clarification requested: 2) "Yes, Requirement R2 mandates that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the Frequency Response."</p>
<p>Response: The drafting team thanks you for your comment. Parts 1 and 2 of clarification 3 are asking basically the same question but do so in different references. Part 1 asks about comparing measured Frequency Response and Frequency Bias and for the proper method for this comparison. The drafting team interpreted this as a mathematical comparison where sign convention is appropriate. The drafting team response in Part 2 is more specific to the comparison needed to ensure that Frequency Bias Setting is as close as practical, or greater than, the Balancing Authority's Frequency Response. Requirement 2 requires that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the estimated Frequency Response per 0.1 Hz change. The drafting team is attempting to point out that sign convention is not consistent, as you have also pointed out.</p> <p>The drafting team agrees there is a lack of detail in the standard. Your comment will be passed on to the standard drafting team responsible for the rewrite of BAL-003.</p>				
Gordon Pietsch	Great River Energy	1	Affirmative	<p>Clarification 1: Does NERC BAL-003 require every Balancing Authority to have a Frequency Response close to 1% of its projected peak load? Response: BAL-003-0.1b does not have a Frequency Response performance obligation. Great River Energy Comment: Great River Energy agrees with the response to Clarification 1.</p> <p>Clarification 2: Requirement R2 mandates that each Balancing Authority "establish and maintain a Frequency Bias Setting that is as close as practical to, or greater than, the Balancing Authority's Frequency Response". Given the sign convention of the Frequency Bias Setting as applied in the ACE equation, is the Frequency Bias Setting required to be a negative value as close as practical to, or greater than (in absolute terms), the estimated Frequency Response so that AGC will not move resources in a manner that would negate the primary response provided by frequency responsive resources? Response: Yes, the Balancing Authority Frequency Bias Setting within the ACE equation is a negative value, expressed in MW/0.1 Hz and should be as close as practical to the natural Frequency Response. If Requirement R2 is met at all times by the Balancing Authority, AGC in Tie Line Bias mode will not move resources in a manner that would withdraw natural Frequency Response. Great River Comment: Great River Energy agrees with the</p>

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				<p>response to Clarification 2, however we believe the response to Clarification 2 should also clarify the significance of the words “or greater than” in Requirement R2. As a Balancing Authority’s Frequency Bias Setting is typically a fixed value and its real-time natural Frequency Response (the primary response to frequency deviations provided predominantly by generator governor response and load damping) is an ever-changing variable, it is only when the absolute value of the Frequency Bias Setting is as close as practical to, or greater than, the absolute value of the estimated natural Frequency Response, that AGC in Tie Line Bias mode is less likely to move resources in a manner that would withdraw the primary response provided for a Frequency excursion</p> <p>Clarification 3: 1) When making the comparison between Frequency Response and Frequency Bias in R2, what is the proper method for this comparison? Should the estimated Frequency Response and Frequency Bias Setting be compared with their typical negative sign convention or in terms of their absolute values? 2) In other words, in order to ensure that AGC does not drive resources to negate the primary response to frequency deviation provided by system resources, including governor response, does Requirement R2 require that the absolute value of the Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the estimated Frequency Response per 0.1 Hz change? Response: 1) Frequency Response and Frequency Bias should be compared with their typical sign convention and not an absolute value. 2) Yes, Requirement R2 mandates that the absolute value of Frequency Bias be as close as practical to the absolute value of Frequency Response. Thus, matching Frequency Response and Frequency Bias helps ensure proper AGC performance. Great River Energy Comment: Great River Energy believes that the response to Clarification 3 Item 1 could be interpreted to conflict with response to Item 2 and perhaps should be reworded. We believe that the responses to Clarification 3 should reinforce the significance of the words “or greater than” in Requirement R2 and that the comparison between the Frequency Bias Setting and the average Frequency Response in Requirement R2 must be made comparing the absolute values of the two terms. We suggest that the response to Clarification 3 Item 1 should be restated in a manner to better align with the response in Item 2 as follows: 1) “With respect to the comparison of values in Requirement R2, though Frequency Response and the Frequency Bias Setting are negative terms by design, selecting a Frequency Bias Setting as close as practical to, or greater than, the Frequency Response requires comparison of the absolute values of those terms so that AGC in Tie Line Bias mode is less likely to move resources in a manner that would withdraw the primary response provided for a Frequency excursion.” Though the response to Clarification 3 Item 2</p>

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				<p>is "Yes", it would be beneficial to the industry if the response fully repeated the clarification requested: 2) "Yes, Requirement R2 mandates that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the Frequency Response."</p> <p>Clarification 4: Is there any defined measure to determine what "as close as practical" means? Requirement R5 mandates that each Balancing Authority that serves native load shall "have a monthly average Frequency Bias Setting that is at least 1% of the Balancing Authority's estimated yearly peak demand per 0.1 Hz change. Does Requirement R5 require that the absolute value of the Balancing Authority's monthly average Frequency Bias Setting be at least 1% of the Balancing Authority's estimated yearly peak demand per 0.1 Hz change. Response: There is not a defined measure to determine what "as close as practical" means. Yes, Requirement R5 of the standard, as an alternate method of determining a Balancing Authority's Frequency Bias Setting, uses the Balancing Authority's estimated yearly peak demand, or the Balancing Authority's estimated maximum generation level in the coming year for Balancing Authorities that do not serve native load, as a proxy to determine the Balancing Authority's Frequency Bias obligation per 0.1 Hz change. A 1% value of yearly peak demand per 0.1 Hz or 1% value of estimated maximum generation level in the coming year per 0.1 Hz must be used as the minimum Frequency Bias Setting. Great River Comment: agrees with the response to Clarification 4.</p> <p>Clarification 5: As the Frequency Bias Setting is typically calculated and applied as a negative value under R2, yet in R5 it is compared against a percentage of a Balancing Authority's estimated yearly peak demand load and is typically a positive value, is the absolute value of the monthly average Frequency Bias Setting required to be at least 1% of the Balancing Authority's estimated yearly peak demand per 0.1 Hz change? If not, how does one reconcile the sign convention differences between R2 and R5? Response: Yes, the absolute value of the monthly average Frequency Bias Setting is required to be at least 1% of the Balancing Authority's estimated yearly peak demand or at least 1% of the Balancing Authority's estimated maximum generation level in the coming year for Balancing Authorities that do not serve native load. Great River Energy Comment: Great River Energy agrees with the response to Clarification 5.</p> <p>Clarification 6: Does BAL-003 have any requirements that would set a value on the amount of Frequency Response that a Balancing Authority must provide? Response: BAL-003-0.1b does not have any requirements mandating a specific magnitude of Frequency Response by the Balancing Authority. Great River Energy</p>

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				Comment: Great River Energy agrees with the response to Clarification 6.
<p>Response: The drafting team thanks you for your affirmative response and clarifying comment. Parts 1 and 2 of clarification 3 are asking basically the same question but do so in different references. Part 1 asks about comparing measured Frequency Response and Frequency Bias and for the proper method for this comparison. The drafting team interpreted this as a mathematical comparison where sign convention is appropriate. The drafting team response in Part 2 is more specific to the comparison needed to ensure that Frequency Bias Setting is as close as practical, or greater than, the Balancing Authority's Frequency Response. Requirement 2 requires that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the estimated Frequency Response per 0.1 Hz change. The drafting team is attempting to point out that sign convention is not consistent, as you have also pointed out. These comments will be forwarded to the standard drafting team assigned to rewriting BAL-003.</p> <p>Since the requirement already states "greater than," the drafting team does not believe further emphasis is necessary.</p>				
James R. Keller	Wisconsin Electric Power Marketing	3	Affirmative	<p>Clarification 2, 3, and 4 are asking questions that include relationships between signed (positive and negative) values. The sign on a number does make a difference. The Responses to these Clarifications are not mathematically correct for the intent of BAL-003-0.1b. #2 and #3: The questions are comparing absolute values of numbers. BAL-003-0.1b states that Bias is close to or greater than Frequency Response. The lesser negative of two values is the greater. A positive value is greater than a negative value. Since one response did not mention absolute values, and the other stated to not use absolute values, I can interpret this to mean that Bias can be a lesser negative value or even a positive value because then it would be the greater of the two (i.e. if Frequency Response = -100 and Bias = - 10, Bias is the greater of the two). #4. This question is asking how a positive value (1% of Load) and a negative value (Bias) should be correctly compared. The response says that the minimum Frequency Bias setting is 1% of yearly peak demand per 0.1 Hz and does not mention sign. Since yearly peak demand is a positive value, I can interpret this to mean that Bias must also be a positive value.</p>
<p>Response: The drafting team thanks you for your affirmative response and clarifying comment. Parts 1 and 2 of clarification 3 are asking basically the same question but do so in different references. Part 1 asks about comparing measured Frequency Response and Frequency Bias and for the proper method for this comparison. The drafting team interpreted this as a mathematical comparison where sign convention is appropriate. The drafting team response in Part 2 is more specific to the comparison needed to ensure that Frequency Bias Setting is as close as practical, or greater than, the Balancing Authority's Frequency Response. Requirement 2 requires that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the estimated Frequency Response per 0.1 Hz change. The drafting team is attempting to point out that sign convention is not consistent, as you have also pointed out. These comments will be forwarded to the standard drafting team assigned to rewriting BAL-003.</p> <p>The drafting team agrees there is a lack of detail in the standard. Your comment will be passed on to the standard drafting team responsible</p>				

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for the rewrite of BAL-003.				
Anthony Jankowski	Wisconsin Energy Corp.	4	Affirmative	<p>Clarification 2, 3, and 4 are asking questions that include relationships between signed (positive and negative) values. The sign on a number does make a difference. The Responses to these Clarifications are not mathematically correct for the intent of BAL-003-0.1b. #2 and #3: The questions are comparing absolute values of numbers. BAL-003-0.1b states that Bias is close to or greater than Frequency Response. The lesser negative of two values is the greater. A positive value is greater than a negative value. Since one response did not mention absolute values, and the other stated to not use absolute values, I can interpret this to mean that Bias can be a lesser negative value or even a positive value because then it would be the greater of the two (i.e. if Frequency Response = -100 and Bias = -10, Bias is the greater of the two). #4. This question is asking how a positive value (1% of Load) and a negative value (Bias) should be correctly compared. The response says that the minimum Frequency Bias setting is 1% of yearly peak demand per 0.1 Hz and does not mention sign. Since yearly peak demand is a positive value, I can interpret this to mean that Bias must also be a positive value.</p>
<p>Response: The drafting team thanks you for your affirmative response and clarifying comment. Parts 1 and 2 of clarification 3 are asking basically the same question but do so in different references. Part 1 asks about comparing measured Frequency Response and Frequency Bias and for the proper method for this comparison. The drafting team interpreted this as a mathematical comparison where sign convention is appropriate. The drafting team response in Part 2 is more specific to the comparison needed to ensure that Frequency Bias Setting is as close as practical, or greater than, the Balancing Authority's Frequency Response. Requirement 2 requires that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the estimated Frequency Response per 0.1 Hz change. The drafting team is attempting to point out that sign convention is not consistent, as you have also pointed out. These comments will be forwarded to the standard drafting team assigned to rewriting BAL-003.</p> <p>The drafting team agrees there is a lack of detail in the standard. Your comment will be passed on to the standard drafting team responsible for the rewrite of BAL-003.</p>				
Linda Horn	Wisconsin Electric Power Co.	5	Affirmative	<p>Clarification 2, 3, and 4 are asking questions that include relationships between signed (positive and negative) values. The sign on a number does make a difference. The Responses to these Clarifications are not mathematically correct for the intent of BAL-003-0.1b. #2 and #3: The questions are comparing absolute values of numbers. BAL-003-0.1b states that Bias is close to or greater than Frequency Response. The lesser negative of two values is the greater. A positive value is greater than a negative value. Since one response did not mention absolute values, and the other stated to not use absolute values, I can interpret</p>

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				<p>this to mean that Bias can be a lesser negative value or even a positive value because then it would be the greater of the two (i.e. if Frequency Response = -100 and Bias = - 10, Bias is the greater of the two). #4. This question is asking how a positive value (1% of Load) and a negative value (Bias) should be correctly compared. The response says that the minimum Frequency Bias setting is 1% of yearly peak demand per 0.1 Hz and does not mention sign. Since yearly peak demand is a positive value, I can interpret this to mean that Bias must also be a positive value.</p>

Response: The drafting team thanks you for your affirmative response and clarifying comment. Parts 1 and 2 of clarification 3 are asking basically the same question but do so in different references. Part 1 asks about comparing measured Frequency Response and Frequency Bias and for the proper method for this comparison. The drafting team interpreted this as a mathematical comparison where sign convention is appropriate. The drafting team response in Part 2 is more specific to the comparison needed to ensure that Frequency Bias Setting is as close as practical, or greater than, the Balancing Authority's Frequency Response. Requirement 2 requires that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the estimated Frequency Response per 0.1 Hz change. The drafting team is attempting to point out that sign convention is not consistent, as you have also pointed out. These comments will be forwarded to the standard drafting team assigned to rewriting BAL-003.

The drafting team agrees there is a lack of detail in the standard. Your comment will be passed on to the standard drafting team responsible for the rewrite of BAL-003.

Alan Gale	City of Tallahassee	5	Affirmative	<p>TAL agrees with the interpretation and thanks the SDT for their efforts. We are especially pleased with the response to Clarification 4. The interpretation that R5 is an "alternate method of determining a BA's Frequency Bias Setting" should be captured in a full revision to the standard as soon as possible. This would eliminate a significant drain on manpower to extract data and perform the calculation that is currently required by R2.1 and then ignored by R5. The two requirements should be combined so that it is clear the calculation is NOT needed to comply with the 1% requirement.</p>
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Response: The drafting team thanks you for your affirmative response and clarifying comment. Parts 1 and 2 of clarification 3 are asking basically the same question but do so in different references. Part 1 asks about comparing measured Frequency Response and Frequency Bias and for the proper method for this comparison. The drafting team interpreted this as a mathematical comparison where sign convention is appropriate. The drafting team response in Part 2 is more specific to the comparison needed to ensure that Frequency Bias Setting is as close as practical, or greater than, the Balancing Authority's Frequency Response. Requirement 2 requires that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the estimated Frequency Response per 0.1 Hz change. The drafting team is attempting to point out that sign convention is not consistent, as you have also pointed out. These comments will be forwarded to the standard drafting team assigned to rewriting BAL-003. The drafting team believes the performance of the calculation in Requirement R2.1 is necessary to prove that the natural frequency response is not greater than the 1% requirement in Requirement R5 in order that the Frequency

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Bias Setting is greater than natural frequency response.				
Douglas E. Hils	Duke Energy Carolina	1	Affirmative	<p>We appreciate the opportunity to comment on this Interpretation. Duke Energy agrees with the response to Clarification 1.</p> <p>Duke Energy agrees with the response to Clarification 2, however we believe the response to Clarification 2 should also clarify the significance of the words “or greater than” in Requirement R2. As a Balancing Authority’s Frequency Bias Setting is typically a fixed value and its real-time natural Frequency Response (the primary response to frequency deviations provided predominantly by generator governor response and load damping) is an ever-changing variable, it is only when the absolute value of the Frequency Bias Setting is as close as practical to, or greater than, the absolute value of the estimated natural Frequency Response, that AGC in Tie Line Bias mode is less likely to move resources in a manner that would withdraw the primary response provided for a Frequency excursion.</p> <p>Duke Energy believes that the response to Clarification 3 Item 1 could be interpreted to conflict with response to Item 2 and perhaps should be reworded. We believe that the responses to Clarification 3 should reinforce the significance of the words “or greater than” in Requirement R2 and that the comparison between the Frequency Bias Setting and the average Frequency Response in Requirement R2 must be made comparing the absolute values of the two terms. We suggest that the response to Clarification 3 Item 1 should be restated in a manner to better align with the response in Item 2 as follows: 1) “With respect to the comparison of values in Requirement R2, though Frequency Response and the Frequency Bias Setting are negative terms by design, selecting a Frequency Bias Setting as close as practical to, or greater than, the Frequency Response requires comparison of the absolute values of those terms so that AGC in Tie Line Bias mode is less likely to move resources in a manner that would withdraw the primary response provided for a Frequency excursion.” Though the response to Clarification 3 Item 2 is “Yes”, it would be beneficial to the industry if the response fully repeated the clarification requested: 2) “Yes, Requirement R2 mandates that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the Frequency Response.”</p> <p>Duke Energy agrees with the response to Clarification 4.</p> <p>Duke Energy agrees with the response to Clarification 5.</p> <p>Duke Energy agrees with the response to Clarification 6.</p>

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<p>Response: The drafting team thanks you for your affirmative response and clarifying comment. Parts 1 and 2 of clarification 3 are asking basically the same question but do so in different references. Part 1 asks about comparing measured Frequency Response and Frequency Bias and for the proper method for this comparison. The drafting team interpreted this as a mathematical comparison where sign convention is appropriate. The drafting team response in Part 2 is more specific to the comparison needed to ensure that Frequency Bias Setting is as close as practical, or greater than, the Balancing Authority's Frequency Response. Requirement 2 requires that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the estimated Frequency Response per 0.1 Hz change. The drafting team is attempting to point out that sign convention is not consistent, as you have also pointed out. These comments will be forwarded to the standard drafting team assigned to rewriting BAL-003.</p> <p>Since the requirement already states "greater than," the drafting team does not believe further emphasis is necessary.</p>				
Kent Saathoff	Electric Reliability Council of Texas, Inc.	10	Affirmative	While the interpretation accurately interprets the standard, the standard could be improved by stating that the Bias Setting should represent the actual frequency response characteristic and that the 1% minimum should be a default value only since it could cause an overbiased situation.
<p>Response: The drafting team thanks you for your affirmative response and clarifying comment. Parts 1 and 2 of clarification 3 are asking basically the same question but do so in different references. Part 1 asks about comparing measured Frequency Response and Frequency Bias and for the proper method for this comparison. The drafting team interpreted this as a mathematical comparison where sign convention is appropriate. The drafting team response in Part 2 is more specific to the comparison needed to ensure that Frequency Bias Setting is as close as practical, or greater than, the Balancing Authority's Frequency Response. Requirement 2 requires that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the estimated Frequency Response per 0.1 Hz change. The drafting team is attempting to point out that sign convention is not consistent, as you have also pointed out. These comments will be forwarded to the standard drafting team assigned to rewriting BAL-003.</p> <p>The drafting team agrees there is a lack of detail in the standard. Your comment will be passed on to the standard drafting team responsible for the rewrite of BAL-003.</p>				
Chuck B Manning	Electric Reliability Council of Texas, Inc.	2	Affirmative	While the interpretation accurately interprets the standard, we believe that the standard could be improved by stating that the Bias Setting should represent the frequency response characteristic and that the 1% minimum may cause an over-biased situation. Instead, there should be a timely performance requirement for the deficient entity (BA) to replace its losses either through self-provision or through purchase from others.
<p>Response: The drafting team thanks you for your affirmative response and clarifying comment. Parts 1 and 2 of clarification 3 are asking basically the same question but do so in different references. Part 1 asks about comparing measured Frequency Response and Frequency Bias and for the proper method for this comparison. The drafting team interpreted this as a mathematical comparison where sign convention is appropriate. The drafting team response in Part 2 is more specific to the comparison needed to ensure that Frequency Bias Setting is as close</p>				

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<p>as practical, or greater than, the Balancing Authority's Frequency Response. Requirement 2 requires that the absolute value of Frequency Bias Setting be as close as practical to, or greater than, the absolute value of the estimated Frequency Response per 0.1 Hz change. The drafting team is attempting to point out that sign convention is not consistent, as you have also pointed out. These comments will be forwarded to the standard drafting team assigned to rewriting BAL-003.</p> <p>The drafting team agrees there is a lack of detail in the standard. Your comment will be passed on to the standard drafting team responsible for the rewrite of BAL-003.</p>				