

**Consideration of Comments on Initial Ballot for Interpretation of BAL-005-1 — Automatic Generation Control Requirement 17 for Portland General Electric**

**Summary Consideration:** Based on the comments submitted with initial ballots for the interpretation of BAL-005-1 Requirement 17, the drafting team (Frequency Task Force) has modified the interpretation as shown below:

As noted in the existing interpretation, BAL-005-1 Requirement 17 applies only to the time error and frequency devices that provide, or in the case of back-up equipment may provide, input into the reporting or compliance ACE equation or provide real-time time error or frequency information to the system operator. Frequency inputs from other sources that are for reference only are excluded. The time error and frequency measurement devices may not necessarily be located in the system operations control room or owned by the Balancing Authority; however, the Balancing Authority has the responsibility for the accuracy of the frequency and time error measurement devices. No other devices are included in R 17. The other devices listed in the table at the end of R17 are for reference only and do not have any mandatory calibration or accuracy requirements.

New or replacement equipment that provides the same functions noted above requires the same calibrations. Some devices used for time error and frequency measurement cannot be calibrated as such. In this case, these devices should be cross-checked against other properly calibrated equipment and replaced if the devices do not meet the required level of accuracy.

Because the interpretation was modified, the drafting team is posting the revised interpretation for another 30-day review period before conducting another initial ballot.

<b>Organization:</b>	<b>Ameren Services Company</b>
<b>Member:</b>	Kirit S. Shah
<b>Comment:</b>	While we know the intent of the requirement is for the devices that provide input to the ACE equation or to the frequency chart displayed to the system operator. However, the standard/interpretation is still ambiguous. The phrase "frequency information to the system operator" may include lots of frequency sensors in plants and substations that provide referential input only. We recommend the requirement language to state the intent very clearly.
<b>Response:</b>	<p>The Frequency Task Force added the following clarifying statements to the interpretation:</p> <ul style="list-style-type: none"> <li>• "Frequency inputs from other sources that are for reference only are excluded."</li> <li>• "The other devices listed in the table at the end of R17 are for reference only and do not have any mandatory calibration or accuracy requirements."</li> </ul> <p>With the clarifying statements that have been added to the interpretation, the scope is limited to input to the ACE equation only.</p>
<b>Organization:</b>	<b>Avista Corp.</b>
<b>Member:</b>	Scott Kinney
<b>Comment:</b>	Avista votes against the new interpretation of BAL-005-1 for the following reasons. The title and purpose of BAL-005 refers specifically to "Automatic Generation Control"

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	<p>and the initial interpretation of BAL-005 focused the scope onto only the control center equipment. This new interpretation contradicts the Title, the Purpose, and the previous interpretation and extends the scope of BAL-005, R17 far beyond AGC input equipment. The interpretation extends R17 to include any equipment which "provide(s) real-time time error or frequency information to the system operator." New substation equipment and technology, such as meters and relays, provide built-in frequency measurement capabilities. In these new substation installations utilities can telemetering substation frequency measurements and present them to system operators by means of SCADA displays. The intention is to improve the system operator's situational awareness in the event of a system breakup, islanding, or blackout recovery. These values are not inputs to AGC. Frequency measurements are also received from neighboring BAs to provide additional situational awareness and are not inputs to AGC. The affect of this interpretation will likely cause the removal of existing situational awareness frequency telemetry points to avoid the yearly calibration requirement for this remote and foreign owned equipment. This defeats the purpose of providing the operators additional system information to help understand the condition of the system. Avista believes that the interpretation should be modified as follows. "As noted in the existing interpretation, BAL-005-1 Requirement 17 applies only to the time error and frequency devices that provide, or in the case of back-up equipment may provide, input into the ACE equation or provide real-time time error or frequency information to the system operator." This yields an interpretation which promotes the validity of the ACE calculation, through calibration of the inputs, without expanding the scope of the standard to non-AGC measurements that only provide additional information to system operators.</p>
<p><b>Response:</b></p>	<p>The Frequency Task Force does not agree that the scope of the standard changes with this interpretation and has added the following clarifying statements to the interpretation:</p> <ul style="list-style-type: none"> <li>• "Frequency inputs from other sources that are for reference only are excluded."</li> <li>• "The other devices listed in the table at the end of R17 are for reference only and do not have any mandatory calibration or accuracy requirements."</li> </ul> <p>With the clarifying statements that have been added to the interpretation, the scope is limited to input to the ACE equation only.</p>
<p><b>Organization:</b></p>	<p><b>Hydro-Quebec TransEnergie</b></p>
<p><b>Member:</b></p>	<p>Julien Gagnon</p>
<p><b>Comment:</b></p>	<p>Even with this interpretation, it is not clear and measurable.</p>
<p><b>Response:</b></p>	<p>The Frequency Task Force added the following clarifying statements to the interpretation:</p> <ul style="list-style-type: none"> <li>• "Frequency inputs from other sources that are for reference only are excluded."</li> <li>• "The other devices listed in the table at the end of R17 are for reference only and do not have any mandatory calibration or accuracy requirements."</li> </ul> <p>With the clarifying statements that have been added to the interpretation, the scope is limited to input to the ACE equation only.</p>
<p><b>Organization:</b></p>	<p><b>New Brunswick Power Transmission Corporation</b></p>
<p><b>Member:</b></p>	<p>Wayne N. Snowdon</p>
<p><b>Comment:</b></p>	<p>The interpretation was confusing and the clarification seems to make the standard even <u>vaguer</u>. Further work needs to be done on the interpretation to make it crisp</p>

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<b>Response:</b>	<p>The Frequency Task Force added the following clarifying statements to the interpretation:</p> <ul style="list-style-type: none"> <li>• “Frequency inputs from other sources that are for reference only are excluded.”</li> <li>• “The other devices listed in the table at the end of R17 are for reference only and do not have any mandatory calibration or accuracy requirements.”</li> </ul> <p>With the clarifying statements that have been added to the interpretation, the scope is limited to input to the ACE equation only.</p>
<b>Organization:</b>	<b>SaskPower</b>
<b>Member:</b>	Wayne Guttormson
<b>Comment:</b>	<p>The following are the comments of SaskPower and the Saskatchewan Regulatory Jurisdiction. The design accuracy requirements for R17 should only apply to new equipment. Unless NERC can demonstrate a serious reliability impact from existing equipment not meeting these specific accuracy requirements that can not be mitigated in some other fashion if need be. The Saskatchewan Regulatory Jurisdiction reminds NERC that it does not have the authority to mandate the addition or replacement of transmission facilities, including the ones listed in R17. We also note that the new interpretation seems to go beyond the original approved interpretation and expands the scope to devices outside of the operations control room.</p>
<b>Response:</b>	<p>R17 is applicable to all frequency meters used as inputs to the ACE equation. This is not a change from the approved BAL-005-1.</p> <p>The Frequency Task Force added the following clarifying statements to the interpretation:</p> <ul style="list-style-type: none"> <li>• “Frequency inputs from other sources that are for reference only are excluded.”</li> <li>• “The other devices listed in the table at the end of R17 are for reference only and do not have any mandatory calibration or accuracy requirements.”</li> </ul> <p>With the clarifying statements that have been added to the interpretation, the scope is limited to input to the ACE equation only.</p>
<b>Organization:</b>	<b>Alberta Electric System Operator</b>
<b>Member:</b>	Anita Lee
<b>Comment:</b>	<p>The new proposed interpretation seems to contradict the last approved interpretation: The last approved interpretation states: "The requirement to "annually check and calibrate" does not address any devices outside of the operations control room". The new proposed interpretation states: "The time error and frequency measurement devices may not necessarily be located in the operations control room or owned by the BA; however the BA has the responsibility for the accuracy of the frequency and time error measurement devices." It is not appropriate for the BA to be responsible for devices that are owned and/or operated by some other functional entity.</p>
<b>Response:</b>	<p>The Frequency Task Force disagrees. The BA is responsible for the accuracy of all frequency inputs to the ACE equation regardless of ownership. The Frequency Task Force added the following clarifying statements to the interpretation:</p> <ul style="list-style-type: none"> <li>• “Frequency inputs from other sources that are for reference only are excluded.”</li> <li>• “The other devices listed in the table at the end of R17 are for reference only</li> </ul>

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	<p style="text-align: center;">and do not have any mandatory calibration or accuracy requirements.”</p> <p>With the clarifying statements that have been added to the interpretation, the scope is limited to input to the ACE equation only.</p>
<b>Organization:</b>	<b>Avista Corp.</b>
<b>Member:</b>	Edward F. Groce
<b>Comment:</b>	<p>Avista votes against the new interpretation of BAL-005-1 for the following reasons. The title and purpose of BAL-005 refers specifically to "Automatic Generation Control" and the initial interpretation of BAL-005 focused the scope onto only the control center equipment. This new interpretation contradicts the Title, the Purpose, and the previous interpretation and extends the scope of BAL-005, R17 far beyond AGC input equipment. The interpretation extends R17 to include any equipment which "provide(s) real-time time error or frequency information to the system operator." New substation equipment and technology, such as meters and relays, provide built-in frequency measurement capabilities. In these new substation installations utilities can telemeter substation frequency measurements and present them to system operators by means of SCADA displays. The intention is to improve the system operator's situational awareness in the event of a system breakup, islanding, or blackout recovery. These values are not inputs to AGC. Frequency measurements are also received from neighboring BAs to provide additional situational awareness and are not inputs to AGC. The affect of this interpretation will likely cause the removal of existing situational awareness frequency telemetry points to avoid the yearly calibration requirement for this remote and foreign owned equipment. This defeats the purpose of providing the operators additional system information to help understand the condition of the system. Avista believes that the interpretation should be modified as follows. "BAL-005-1 Requirement 17 applies only to the time error and frequency devices that provide, or in the case of back-up equipment may provide, input into the ACE equation." This yields an interpretation which promotes the validity of the ACE calculation, through calibration of the inputs, without expanding the scope of the standard to non-AGC measurements that only provide additional information to system operators.</p>
<b>Response:</b>	<p>The Frequency Task Force does not agree that the scope of the standard changes with this interpretation and added the following clarifying statements to the interpretation:</p> <ul style="list-style-type: none"> <li>• “Frequency inputs from other sources that are for reference only are excluded.”</li> <li>• “The other devices listed in the table at the end of R17 are for reference only and do not have any mandatory calibration or accuracy requirements.”</li> </ul> <p>With the clarifying statements that have been added to the interpretation, the scope is limited to input to the ACE equation only.</p>
<b>Organization:</b>	<b>Entergy Services, Inc.</b>
<b>Member:</b>	William Franklin
<b>Comment:</b>	<p>It is not clear what happens to the previous interpretation for this Requirement. The proposed interpretation conflicts with the existing interpretation. Specifically, the existing requirement states that "the requirement to annually check and calibrate does not address any devices outside of the operations control room" but the new interpretation states that "The time error and frequency measurement devices may not necessarily be located in the operations control room..." The implementation plan of the proposed interpretation should also supersede the current interpretation. Additionally, if the intent of the Requirement is to ensure that the entire frequency monitoring circuit is calibrated then state as such (from point of sensing to display).</p>

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<b>Response:</b>	<p>R17 only addresses frequency and time error devices that provide input to the ACE equation. The other devices listed in the table at the end of R17 are for reference only and do not have any mandatory calibration or accuracy requirements.</p> <p>At the time the requirement and first interpretation were prepared, the phrase “in the operations control room” was intended to include the frequency inputs used in the ACE equation. This language has proven to be ambiguous and should have focused on the frequency devices that provide input to the ACE equation, not the physical location of the devices within the BA area.</p> <p>The Frequency Task Force added the following clarifying statements to the interpretation:</p> <ul style="list-style-type: none"> <li>• “Frequency inputs from other sources that are for reference only are excluded.”</li> <li>• “The other devices listed in the table at the end of R17 are for reference only and do not have any mandatory calibration or accuracy requirements.”</li> </ul> <p>With the clarifying statements that have been added to the interpretation, the scope is limited to input to the ACE equation only.</p> <p>The interpretation effort is to clarify the requirement. An Implementation Plan does not exist for the interpretation</p>
<b>Organization:</b>	<b>Commonwealth of Massachusetts Department of Public Utilities</b>
<b>Member:</b>	Donald E. Nelson
<b>Comment:</b>	The interpretation was confusing to the members and the clarification seems to have made the standard even vaguer. Further work needs to be done on the interpretation to make it crisp, clear and measurable.
<b>Response:</b>	<p>The Frequency Task Force added the following clarifying statements to the interpretation:</p> <ul style="list-style-type: none"> <li>• “Frequency inputs from other sources that are for reference only are excluded.”</li> <li>• “The other devices listed in the table at the end of R17 are for reference only and do not have any mandatory calibration or accuracy requirements.”</li> </ul> <p>With the clarifying statements that have been added to the interpretation, the scope is limited to input to the ACE equation only.</p>
<b>Organization:</b>	<b>SERC Reliability Corporation</b>
<b>Member:</b>	Gerry W. Cauley
<b>Comment:</b>	The interpretation, while correct, appears to dodge the principal question by the requester. That is whether the calibration requirement applies to only new/replacement equipment. The answer is clearly no, it applies to existing and new/replacement equipment. The prior operating policy from which this requirement was translated never intended to limit the obligation to only new equipment.
<b>Response:</b>	The Frequency Task Force agrees, as captured in the last paragraph of this interpretation: “New or replacement equipment that provides the same functions noted above requires the same calibrations. Some devices used for time error and frequency measurement cannot be calibrated as such. In this case, these devices should be cross-checked against other properly calibrated equipment and replaced if the devices do not meet the required level of accuracy.”