

Note: an Interpretation cannot be used to change a standard.

Request for an Interpretation of a Reliability Standard	
Date submitted:	October 2, 2009
Date accepted:	October 5, 2009
Contact information for person requesting the interpretation:	
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Identify the standard that needs clarification:	
Standard Number (include version number):	BAL-001-01.a, BAL-002-0
Standard Title:	Real Power Balancing Control Performance, Disturbance Control Performance
Identify specifically what requirement needs clarification:	
<p>Requirement Number and Text of Requirement: BAL-001-0_1.a, R1 and Interpretation of BAL-001; BAL-002, R4.1, 5.1 and 5.2. All text referring to ACE and/or Raw ACE</p> <p>BAL-001-0_1.a</p> <p>R1. Each Balancing Authority shall operate such that, on a rolling 12-month basis, the average of the clock-minute averages of the Balancing Authority's Area Control Error (ACE) divided by 10B (B is the clock-minute average of the Balancing Authority Area's Frequency Bias) times the corresponding clock-minute averages of the Interconnection's Frequency Error is less than a specific limit. This limit \square is a constant derived from a targeted frequency bound (separately calculated for each Interconnection) that is reviewed and set as necessary by the NERC Operating Committee.</p> <p>Interpretation of Requirement 1</p> <p>Request: <i>Does the WECC Automatic Time Error Control Procedure (WATEC) violate Requirement 1 of BAL-001-0?</i></p> <p>Interpretation:</p> <p>Requirement 1 of BAL-001 — Real Power Balancing Control Performance, is the definition of the area control error (ACE) equation and the limits established for Control Performance Standard 1 (CPS1).</p> <p>The WATEC procedural documents ask Balancing Authorities to maintain raw ACE for</p>	

CPS reporting and to control via WATEC-adjusted ACE.

- As long as Balancing Authorities use raw (unadjusted for WATEC) ACE for CPS reporting purposes, the use of WATEC for control is not in violation of BAL-001 Requirement 1.

BAL-002-0:

R4.1 A Balancing Authority shall return its ACE to zero if its ACE just prior to the Reportable Disturbance was positive or equal to zero. For negative initial ACE values just prior to the Disturbance, the Balancing Authority shall return ACE to its pre-Disturbance value.

R5.1 The Reserve Sharing Group reviews group ACE (or equivalent) and demonstrates compliance to the DCS. To be in compliance, the group ACE (or its equivalent) must meet the Disturbance Recovery Criterion after the schedule change(s) related to reserve sharing have been fully implemented, and within the Disturbance Recovery Period.

Or

R5.2 The Reserve Sharing Group reviews each member's ACE in response to the activation of reserves. To be in compliance, a member's ACE (or its equivalent) must meet the Disturbance Recovery Criterion after the schedule change(s) related to reserve sharing have been fully implemented, and within the Disturbance Recovery Period.

Clarification needed:

In WECC, as well as other parts of the country, Balancing Authorities often use modified ACE equations in their AGC that include other variables beyond those specified in NERC BAL-001. Some Balancing Authorities in WECC in particular use variables from the ACE Diversity Interchange (ADI) procedure. When responding to a disturbance as described in BAL-002 R4, BPA questions whether the "ACE" referenced in the standards is intended to be the "control ACE" used in AGC, or the "raw ACE" referenced in BAL-001? Also, can the "raw ACE" referenced in BAL-001 include the ADI offset?

Does ADI as implemented in Western Interconnection meet the BAL-001 and BAL-002 reporting standards since the ADI adjustment does go into the NERC reportable ACE (raw ACE) with what has been characterized as a pseudo-tie, but is not scheduled and is paid back with the inadvertent interchange payback methodology as used in WECC?

Background:

The Western Interconnection implementation utilizes a central computer system hosted by British Columbia Transmission Corporation (BCTC) in Vancouver, Canada. Each participating BA sends their raw ACE to the ADI computer system via ICCP data links. The ADI system sums the +ve and -ve ACEs separately with the larger sum termed the 'majority ACE' and the lesser the 'minority ACE'. BAs are grouped similarly according to the signs of their individual ACEs: those with an ACE having the same sign as the majority ACE belong to the 'majority group' and vice-versa.

The minority ACE is then shared equally amongst the minority BAs, yielding adjustments which reduce each of their ACEs by as much as 30 MW without making any of them cross zero. The majority ACE is also shared equally amongst the majority BAs in a similar manner.

Unless ADI is disabled, ADI adjustments are applied to every AGC cycle. Each participant compares each adjustment received against his current ACE to ensure the adjustment will not

make ACE cross zero. The resulting adjustments are applied to the ACE used for real power balancing control and to the NERC ACE. The resulting adjustments are also integrated hourly into +ve and -ve amounts thus indicating the extent to which each participant uses the adjustments.

The ADI Adjustment is reflected in inadvertent interchange for each Participant (Balancing Authority Area). This is because the ADI adjustment allows an ACE to persist instead of controlling generation to reduce it and that action (or inaction) is reflected in tie-line accumulators and accordingly, influences the amount of hourly inadvertent. ADI does not change the calculation of inadvertent; inadvertent is still calculated as the difference between tie-line accumulators and schedules or net metered MW-hours minus the net Balancing Authority Area's interchange schedule.

Identify the material impact associated with this interpretation:

Identify the material impact to your organization or others caused by the lack of clarity or an incorrect interpretation of this standard.

ADI has been operational in the Western Interconnection since March 2007 with four Balancing Authorities (BAs) initially participating. Since February, 2009, six additional BAs have joined as active participants. ADI has proven to be a safe, reliable method for allowing BAs to aggregate control error and as a result, share the burden of momentary generation control without adversely affecting the reliability of the Western Interconnection. If ADI cannot be used when meeting BAL-001 and BAL-002, the material impact could include penalties, in addition to increased operating expenses.

Project 2009-25: Response to Request for an Interpretation of NERC Standards BAL-001-0.1a and BAL-002-0 for the Bonneville Power Administration

The following interpretation of BAL-001-0.1a — Real Power Balancing Control Performance and BAL-002-0 — Disturbance Control Performance was developed by the Balancing Authority Controls drafting team.

Requirement Number and Text of Requirement

BAL-001-0.1a

- R1.** Each Balancing Authority shall operate such that, on a rolling 12-month basis, the average of the clock-minute averages of the Balancing Authority’s Area Control Error (ACE) divided by 10B (B is the clock-minute average of the Balancing Authority Area’s Frequency Bias) times the corresponding clock-minute averages of the Interconnection’s Frequency Error is less than a specific limit. This limit \square_{\square} is a constant derived from a targeted frequency bound (separately calculated for each Interconnection) that is reviewed and set as necessary by the NERC Operating Committee.

Appendix 2

Interpretation of Requirement 1

Request: *Does the WECC Automatic Time Error Control Procedure (WATEC) violate Requirement 1 of BAL-001-0?*

Interpretation:

Requirement 1 of BAL-001 — Real Power Balancing Control Performance, is the definition of the area control error (ACE) equation and the limits established for Control Performance Standard 1 (CPS1).

- o The WATEC procedural documents ask Balancing Authorities to maintain raw ACE for CPS reporting and to control via WATEC-adjusted ACE.
- o As long as Balancing Authorities use raw (unadjusted for WATEC) ACE for CPS reporting purposes, the use of WATEC for control is not in violation of BAL-001 Requirement 1.

BAL-002-0

R4.1 A Balancing Authority shall return its ACE to zero if its ACE just prior to the Reportable Disturbance was positive or equal to zero. For negative initial ACE values just prior to the Disturbance, the Balancing Authority shall return ACE to its pre-Disturbance value.

R5.1 The Reserve Sharing Group reviews group ACE (or equivalent) and demonstrates compliance to the DCS. To be in compliance, the group ACE (or its equivalent) must meet the Disturbance Recovery Criterion after the schedule change(s) related to reserve sharing have been fully implemented, and within the Disturbance Recovery Period.

or

R5.2 The Reserve Sharing Group reviews each member’s ACE in response to the activation of reserves. To be in compliance, a member’s ACE (or its equivalent) must meet the

Disturbance Recovery Criterion after the schedule change(s) related to reserve sharing have been fully implemented, and within the Disturbance Recovery Period.

Question 1

When responding to a disturbance as described in BAL-002 R4, BPA questions whether the "ACE" referenced in the standards is intended to be the "control ACE" used in AGC, or the "raw ACE" referenced in BAL-001? Also, can the "raw ACE" referenced in BAL-001 include the ADI offset?

Response to Question 1

The drafting team interprets that the ACE referenced in BAL-002-0 Requirement R4 is ACE as defined in BAL-001-0.1a Requirement R1 ("raw ACE" or "reporting ACE").

As described in the definition of Reserve Sharing Group, if an entity experiencing a Disturbance is scheduling energy from an Adjacent Balancing Authority to aid recovery and ramping it in over a period faster than the supplying party could reasonably be expected to load generation, then the Areas become a Reserve Sharing Group for the purposes of evaluating disturbance control performance. Consequently, for the purposes of determining ACE recovery in response to a Reportable Disturbance, the reporting entity must account for all entities that responded to the Disturbance.

In cases where an entity experiencing a Reportable Disturbance (either with a single Balancing Authority or with a Balancing Authority that is part of a Reserve Sharing Group) is part of an ACE diversity interchange (ADI) group where ADI is implemented in real time and is implemented such that all ADI participants' ADI adjustments net to zero, then the accumulated ACE of all members of the Reserve Sharing Group, as well as all members of the ADI who are not Reserve Sharing Group members, shall be utilized when computing the collective ACE used for evaluation of the Reserve Sharing Group's performance to meet the Disturbance Control Standard (DCS). The Balancing Authority or Reserve Sharing Group with the Disturbance remains the responsible entity for the purposes of compliance to the NERC standards. The reason for using the collective ACE values for all participants (Reserve Sharing Group members and ADI participants which are not members of the Reserve Sharing Group) when determining the collective ACE is to effectively remove any ADI impacts to ACE equations.

As NERC does not have any standards related to ADI, and ADI implementation can vary widely, it is unclear whether or not ADI should be included in the ACE described in BAL-001-0.1a. NERC has other options for addressing this question, such as the standards development process, which includes a special procedure for variances, or the Joint Registration Organization provision of the Organization Registration and Certification Program.

Question 2

Does ADI as implemented in Western Interconnection meet the BAL-001 and BAL-002 reporting standards since the ADI adjustment does go into the NERC reportable ACE (raw ACE) with what has been characterized as a pseudo-tie, but is not scheduled and is paid back with the inadvertent interchange payback methodology as used in WECC?

Response to Question 2

This is not an interpretation question, but rather a question related to application of the standard. It is not within the scope of the interpretation process to establish whether or not an entity is compliant with any specific standard. As stated in the response to question 1, NERC does not have any standards related to ADI, and ADI implementation can vary widely. NERC has other options for addressing this question, such as the standards development process, which includes a special procedure for variances, or the Joint Registration Organization provision of the Organization Registration and Certification Program.