

**Stakeholder Comparison Comment Rationale Matrix**

**2011-09-27**

**AESO AUTHORITATIVE DOCUMENT PROCESS**

**Alberta Reliability Standard – BAL-STD-002-AB-0 Contingency Reserves**

<p>Date of Request for Comment [yyyy/mm/dd]: <u>2011-09-27</u></p> <p>Period of Consultation [yyyy/mm/dd]: <u>2011-09-27</u> through <u>2011-10-14</u></p> <p>Comments From: <u>ATCO Power</u></p> <p>Date [yyyy/mm/dd]: <u>2011/10/14</u></p>	<p>Contact: <u>Aliza Dewji</u></p> <p>Phone: <u>403-245-7727</u></p> <p>E-mail: <u>Aliza.dewji@atcopower.com</u></p>
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COMPARISON BETWEEN WECC BAL-STD-002-0 AND ALBERTA BAL-STD-002-AB-0				
CONTINGENCY RESERVES				
WECC BAL-STD-002-0	Alberta BAL-STD-002-AB-0	Reason for Differences	Stakeholder Comments (Insert comments here)	AESO Replies
<p><b>Purpose</b></p> <p>Regional Reliability Standard to address the Operating Reserve requirements of the Western Interconnection.</p>	<p><b>Purpose</b></p> <p>The purpose of this <b>reliability standard</b> is to ensure the <b>ISO</b> has the <b>contingency reserve</b> to meet the requirements of the <b>western interconnection</b>.</p>	<p>Align the purpose with the contents of proposed BAL-STD-002-AB-0.</p> <p>Operating reserve consists of regulating reserve and contingency reserve. Regulating reserve requirements are specified in proposed BAL-001-AB-0 and contingency reserve requirements are specified in proposed BAL-STD-002-AB-0, accordingly the title and purpose of proposed BAL-STD-002-AB-0 have been amended.</p>		
<p><b>Applicability</b></p> <p><b>4.1.1</b> This criterion applies to each Responsible Entity that is (i) a Balancing Authority or a member of a Reserve Sharing Group that does not designate its Reserve Sharing Group as its agent, or (ii) a Reserve Sharing Group. A Responsible Entity that is a Balancing Authority and a member of a Reserve Sharing Group is subject to this criterion only as described in Section A.4.1.2. A Responsible Entity that is a member of a Reserve Sharing Group is not subject to this</p>	<p><b>Applicability</b></p> <p>This <b>reliability standard</b> applies to:</p> <ul style="list-style-type: none"> <li>the <b>ISO</b> which may meet the requirements of BAL-STD-002-AB-0 through participation in a <b>reserve sharing group</b> which the <b>ISO</b> has designated as its agent.</li> </ul>	<p>The terms used to describe applicable entities in proposed BAL-STD-002-AB-0 have been amended from the WECC version to correctly identify the applicable entities in Alberta and to align with terms included in the AESO <i>Consolidated Authoritative Documents Glossary</i>.</p>		

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<p>critterion on an individual basis.</p> <p><b>4.1.2</b> Responsible Entities that are members of a Reserve Sharing Group may designate in writing to WECC a Responsible Entity to act as agent for purposes of this criterion for each such Reserve Sharing Group. Such Reserve Sharing Group agents shall be responsible for all data submission requirements under Section D of this Reliability Agreement. Unless a Reserve Sharing Group agent identifies individual Responsible Entities responsible for noncompliance at the time of data submission, sanctions for noncompliance shall be assessed against the agent on behalf of the Reserve Sharing Group, and it shall be the responsibility of the members of the Reserve Sharing Group to allocate responsibility for such noncompliance. If a Responsible Entity that is a member of a Reserve Sharing Group does not designate in writing to WECC a Responsible Entity to act as agent for purposes of this criterion for each such Reserve Sharing Group, such</p>				

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Responsible Entity shall be subject to this criterion on an individual basis.				
<p><b>Effective Date</b></p> <p>This Western Electricity Coordinating Council Regional Reliability Standard will be effective when approved by the Federal Energy Regulatory Commission under Section 215 of the Federal Power Act. This Regional Reliability Standard shall be in effect for one year from the date of Commission approval or until a North American Standard or a revised Western Electricity Coordinating Council Regional Reliability Standard goes into place, whichever occurs first. At no time shall this regional Standard be enforced in addition to a similar North American Standard</p>	<p><b>Effective Date</b></p> <p>Oct. 1, 2012</p>	<p>The effective date of October 1, 2012 for proposed BAL-STD-002-AB-0 has been proposed to allow a reasonable amount of time for Alberta entities to implement proposed BAL-STD-002-AB-0.</p>		
<p><b>WR1</b> The reliable operation of the interconnected power system requires that adequate generating</p>		<p><input type="checkbox"/> New <input type="checkbox"/> Amended</p>		

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<p>capacity be available at all times to maintain scheduled frequency and avoid loss of firm load following transmission or generation contingencies. This generating capacity is necessary to:</p> <ul style="list-style-type: none"> <li>• supply requirements for load variations.</li> <li>• replace generating capacity and energy lost due to forced outages of generation or transmission equipment.</li> <li>• meet on-demand obligations.</li> <li>• replace energy lost due to curtailment of interruptible imports.</li> </ul>		<p><input checked="" type="checkbox"/> Deleted</p> <p><b>Alberta Variance<sup>1</sup>:</b> WECC requirement WR1 has no requirements and therefore has been deleted from proposed BAL-STD-002-AB-0.</p>		
<p><b>WR1 a.</b> Minimum Operating Reserve. Each Balancing Authority shall maintain minimum Operating Reserve which is the sum of the following:</p> <p>(i) Regulating reserve. Sufficient Spinning Reserve, immediately responsive to</p>	<p><b>R1</b> The <b>ISO</b> must calculate and have access to, at a minimum, <b>contingency reserve</b> the greater of:</p> <p>(a) an amount equal to the loss of the most severe single <b>contingency</b>; or</p> <p>(b) an amount equal to the sum of</p>	<p><input type="checkbox"/> New</p> <p><input checked="" type="checkbox"/> Amended</p> <p><input type="checkbox"/> Deleted</p> <p>WECC requirement WR1 a. has been split into Alberta requirements R1, R2 and R2.1 to clarify the requirement in proposed BAL-STD-002-AB-0.</p>	<p>Comment for R1:</p> <p>ATCO Power would like to request details clarifying the calculation for the amount of required contingency reserve; specifically when the interconnection is carrying both imports and operating reserves. I.e. does the calculation factor in the</p>	

<sup>1</sup> An Alberta variance is a change from the US Reliability Standard that the AESO has determined is material.

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<p>Automatic Generation Control (AGC) to provide sufficient regulating margin to allow the Balancing Authority to meet NERC's Control Performance Criteria (see BAL-001-0).</p> <p>(ii) Contingency reserve. An amount of Spinning Reserve and Nonspinning Reserve (at least half of which must be Spinning Reserve), sufficient to meet the NERC Disturbance Control Standard BAL-002-0, equal to the greater of:</p> <p>(a) The loss of generating capacity due to forced outages of generation or transmission equipment that would result from the most severe single contingency; or</p> <p>(b) The sum of five percent of the load responsibility served by hydro generation and seven percent of the load responsibility served by thermal generation.</p> <p>The combined unit ramp rate</p>	<p>5% of the <b>load</b> responsibility served by hydro <b>generating units</b> and 7% of the <b>load</b> responsibility served by thermal <b>generating units</b> based upon data integrated over each clock hour;</p> <p>except within the first sixty (60) minutes following a <b>disturbance</b> resulting from a loss of supply and requiring the activation of <b>contingency reserves</b> or except following the deployment of <b>contingency reserves</b> during implementation of the <b>ISO's</b> capacity and energy emergency plan.</p> <p><b>R2.</b> The <b>ISO</b> must maintain at least 50% of the <b>contingency reserve</b> required in requirement R1 as <b>spinning reserve</b>.</p> <p><b>R2.1</b> The <b>ISO</b> must have access to <b>spinning reserve</b> which is capable of fully responding within ten (10) minutes.</p>	<p>Operating reserves consist of regulating reserve and contingency reserve. Regulating reserve requirements are in proposed BAL-001-AB-0 and contingency reserve requirements are in proposed BAL-STD-002-AB-0.</p> <p>WECC sub-requirement a(i) is redundant with the requirements of BAL-001-AB-1 and therefore has not been included in proposed BAL-STD-002-AB-0.</p> <p>WECC measure WM1 contains requirements regarding the sixty (60) minute timeframe for activating and re-establishing operating reserves and "over each clock hour", which have been moved to Alberta requirement R1.</p> <p><b>Alberta Variance<sup>2</sup>:</b> WECC sub-requirements WR1 a(iii) and (iv) have not been included in proposed BAL-STD-002-AB-0 as interruptible imports and on-demand obligations are not accommodated under the Alberta market structure.</p>	<p>impact of a sudden loss of the interconnection?</p>	

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<p>of each Balancing Authority's on-line, unloaded generating capacity must be capable of responding to the Spinning Reserve requirement of that Balancing Authority within ten minutes</p> <p>(iii) Additional reserve for interruptible imports. An amount of reserve, which can be made effective within ten minutes, equal to interruptible imports.</p> <p>(iv) Additional reserve for on-demand obligations. An amount of reserve, which can be made effective within ten minutes, equal to on-demand obligations to other entities or Balancing Authorities.</p>				
<p><b>WR1 b.</b> Acceptable types of Nonspinning Reserve. The Nonspinning Reserve obligations identified in subsections a(ii), a(iii), and a(iv), if any, can be met by use of the following:</p> <p>(i) interruptible load;</p>	<p><b>R3.</b> The <b>ISO</b> must have access to <b>contingency reserve</b> which is capable of fully responding in ten (10) minutes and includes one or more of the following:</p> <p>(a) spinning reserve;</p> <p>(b) interruptible demand;</p>	<p><input type="checkbox"/> New</p> <p><input checked="" type="checkbox"/> Amended</p> <p><input type="checkbox"/> Deleted</p> <p><b>Alberta Variance<sup>3</sup>:</b> Alberta requirement R3 has been re-written to describe allowable contingency</p>		

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(ii) interruptible exports; (iii) on-demand rights from other entities or Balancing Authorities; (iv) Spinning Reserve in excess of requirements in subsections a(i) and a(ii); or (v) off-line generation which qualifies as Nonspinning Reserve.	(c) any interchange transaction designated by the source balancing authority as contingency reserve; (d) <b>contingency reserve</b> that is sourced external to Alberta and that, by agreement, is deliverable to Alberta on firm transmission service; (e) any off-line <b>generating unit</b> which can be synchronized and generating; or (f) during capacity and energy emergencies, <b>load</b> that can be interrupted.	reserves based on the terms in the AESO <i>Consolidated Authoritative Documents Glossary</i> and in alignment with the ISO rules. WECC R1 b(ii) has not been included in Alberta requirement R3 of proposed BAL-STD-002-AB-0 as interruptible exports are not accommodated in the Alberta market.		
<b>WR1 c.</b> Knowledge of Operating Reserve. Operating Reserves shall be calculated such that the amount available which can be fully activated in the next ten minutes will be known at all times.	<b>R4.</b> The <b>ISO</b> must continuously calculate the amount of <b>contingency reserve</b> available which can be fully activated in the next ten (10) minutes and provide this amount to its real-time operating personnel.	<input type="checkbox"/> New <input checked="" type="checkbox"/> Amended <input type="checkbox"/> Deleted WECC measure WR1 c contains a requirement for the amount of operating reserves to be known at all times, this measure was included as a new Alberta requirement R4 in proposed BAL-STD-002-AB-0 and was further amended to ensure the requirement is measurable.		
<b>WR1 d.</b> Restoration of Operating Reserve. After the occurrence of any event necessitating the use of		<input type="checkbox"/> New <input type="checkbox"/> Amended		

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Operating Reserve, that reserve shall be restored as promptly as practicable. The time taken to restore reserves shall not exceed 60 minutes (Source: WECC Criterion)		<input checked="" type="checkbox"/> Deleted WECC requirement WR1 d has been deleted as it is effectively covered in Alberta requirement R1.		
<p><b>WM1.</b> Except within the first 60 minutes following an event requiring the activation of Operating Reserves, a Responsible Entity identified in Section A.4 must maintain 100% of required Operating Reserve levels based upon data averaged over each clock hour.</p> <p>Following every event requiring the activation of Operating Reserves, a Responsible Entity identified in Section A.4 must re-establish the required Operating Reserve levels within 60 minutes. (Source: Compliance Standard)</p>		<input type="checkbox"/> New <input type="checkbox"/> Amended <input checked="" type="checkbox"/> Deleted WECC measure WM1 contains requirements regarding the sixty (60) minute timeframe for activating and re-establishing operating reserves and “over each clock hour”, which have been moved to Alberta requirement R1.		
	<p><b>MR1.</b> Evidence of calculating and having access to <b>contingency reserves</b> as required in requirement R1 exists. Evidence may include documentation of the methodology of the <b>contingency reserves</b> calculation, <b>ancillary</b></p>			

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	<p><b>services</b> contracts or a <b>reserve sharing group</b> agreement including a reserve sharing group agent appointment agreement.</p> <p><b>MR2.</b> Evidence of maintaining 50% of the <b>contingency reserves</b> as <b>spinning reserves</b> as required in requirement R2 exists. Evidence may include records of <b>dispatches of ancillary services</b> or a <b>reserve sharing group</b> agreement including a reserve sharing group agent appointment agreement.</p> <p><b>MR2.1</b> Evidence of ensuring <b>spinning reserves</b> are capable of responding as required in requirement R2.1 exists. Evidence may include <b>ISO</b> technical requirements or <b>ancillary services</b> contracts or a <b>reserve sharing group</b> agreement including a reserve sharing group agent appointment agreement.</p>			
	<p><b>MR3.</b> Evidence of ensuring <b>contingency reserves</b> are capable of responding and includes one or more of the <b>contingency reserves</b> as required in requirement R3 exists. Evidence may include technical requirements of</p>			

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	<p><b>contingency reserves</b>, records of <b>ancillary services dispatches</b> or <b>directives</b>, and SCADA data confirming the response of <b>contingency reserve</b> or a <b>reserve sharing group</b> agreement including a reserve sharing group agent appointment agreement.</p>			
	<p><b>MR4</b>. Evidence of calculating the <b>contingency reserve</b> and providing it to personnel as required in requirement R4 exists.</p> <p>Evidence may include real-time display of the <b>contingency reserve</b> or SCADA data confirming the continuous calculation or a <b>reserve sharing group</b> agreement including a reserve sharing group agent appointment agreement.</p>			
<p><b>Compliance</b> To view the compliance section D of the NERC reliability standard follow this link: <a href="http://www.nerc.com/files/BAL-STD-002-0.pdf">http://www.nerc.com/files/BAL-STD-002-0.pdf</a></p>		<p>The Alberta reliability standards do not contain a compliance section. Compliance with all Alberta reliability standards is completed in accordance with the Alberta Reliability Standards Compliance Monitoring Program, available on the AESO website at: <a href="http://www.aeso.ca/loadsettlement/17189.html">http://www.aeso.ca/loadsettlement/17189.html</a></p>		

COMPARISON BETWEEN WECC BAL-STD-002-0 AND ALBERTA BAL-STD-002-AB-0 CONTINGENCY RESERVES				
WECC BAL-STD-002-0	Alberta BAL-STD-002-AB-0	Reason for Differences	Stakeholder Comments (Insert comments here)	AESO Replies
<b>Regional Differences</b> None identified.	<b>Regional Differences</b> None identified.	Not applicable in Alberta		