



Stakeholder Comment and Rationale Form

AESO AUTHORITATIVE DOCUMENT PROCESS

**Stakeholder Consultation Draft
2010-06-11**

Alberta Reliability Standard – VAR-001-AB-1a Voltage and Reactive Control

NOTE: The AESO is asking market participants to give an initial indication of their support for, or opposition to, the specific Alberta Reliability Standard variances to the NERC requirements referenced below. Such an initial indication assists in the AESO's practical understanding of the receptivity of the industry to the proposed changes, and in that regard the AESO thanks, in advance, all market participants who choose to respond. With regard to the specific standard changes and their implications, such responses are without prejudice to the rights of market participants under the Act, any regulations, or related decisions of the Commission.

Date of Request for Comment [yyyy/mm/dd]: <u>2010-06-11</u> Period of Consultation [yyyy/mm/dd]: <u>2010-06-11</u> through <u>2010-07-09</u> Comments From: <u>EPCOR Distribution & Transmission Inc.</u> Date [yyyy/mm/dd]: <u>2010/07/09</u>	Contact: <u>Jerry Mossing</u> Phone: <u>403-539-2496</u> E-mail: <u>ars_comments@aes0.ca</u>
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Listed below is the summary of changes for the proposed new, removed or amended sections of the standard. Please refer back to the Letter of Notice under the "Attachments to Letter of Notice" section to view the proposed content changes to the standard. Please double-click on the check box for either "Support" or "Oppose" and/or place your comments / reasons for position underneath (if any).

1. Definitions	Comments	Rationale and/or Alternate Proposal
(a) New "aggregated generating facilities" means an aggregation of generating units, including any reactive power resources, which are: (i) designated by the ISO; and (ii) situated in the same proximate location at one or more point of connections.	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	



1. Definitions	Comments	Rationale and/or Alternate Proposal
<p>“voltage regulating system” means the equipment that automatically controls the reactive power resources to regulate the voltage level at any collector bus.</p>	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	
<p>(b) Removals</p>	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	
<p>(c) Amendments</p>	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	
2. Alberta Reliability Standards	Comments	Rationale and/or Alternate Proposal
<p>(a) New Alberta Variances</p> <p>The provisions within the proposed Alberta Reliability Standard <i>VAR-001-AB-1a: Voltage and Reactive Control</i>, are derived from NERC VAR-001-1a with suitable revisions for the responsible entities within Alberta. An Alberta variance is a change from the NERC Reliability Standard that the AESO has determined is material. Specifically, the following provisions have been added, replacing existing NERC VAR-001-1a requirements.</p>		
<p>R1 The ISO must make rules for monitoring and controlling voltage levels and MVar flows within the transmission system, including consulting with TFOs and transmission operators adjacent to Alberta as appropriate in the development of such ISO rules.</p>	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	



2. Alberta Reliability Standards	Comments	Rationale and/or Alternate Proposal
<p>R2. The ISO and each TFO must develop, maintain, and implement procedures, for monitoring and controlling voltage levels and MVar flows within the transmission system, including consulting with each other, neighbouring TFOs and, as appropriate, transmission operators adjacent to Alberta.</p>	<p> <input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input checked="" type="checkbox"/> Oppose </p> <p>Smaller TFOs, such as EDTI, do not have the ability to actively control voltage levels and MVar flows without the direction of the ISO. EDTI believes that this requirement should be reworded to separate smaller TFOs without this capability from those with it, or alternatively to eliminate this requirement from TFOs without this capability entirely.</p>	
<p>R3 The ISO must operate with sufficient reactive power resources available within Alberta to protect the voltage levels of the transmission system under normal and contingency conditions. This includes, without limitation, consideration of the transmission system share of the reactive requirements of interconnections.</p>	<p> <input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose </p> <p><i>Insert Comments / Reason for Position (if any)</i></p>	
<p>R4 The ISO may establish and publish criteria on its website that exempts generating units from compliance with any or all of the directives in requirements R5 and R6.3.</p> <p>R4.1 The ISO must maintain a list of generating units and wind aggregated generating facilities in Alberta that are exempt from following voltage level directives or reactive power requirements in the ISO rules.</p> <p>R4.2. The ISO must inform each GFO when its generating unit(s) is included on the list referred to in requirement R4.1.</p>	<p> <input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose </p> <p><i>Insert Comments / Reason for Position (if any)</i></p>	
<p>R5. The ISO must issue directives to the operator of a generating unit that specify the following:</p> <p>a) voltage level on the high voltage side of the transformer at the point of connection between each generating unit and the TFO's facilities; or</p> <p>b) the reactive power to be achieved by the generating unit.</p>	<p> <input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose </p> <p><i>Insert Comments / Reason for Position (if any)</i></p>	



2. Alberta Reliability Standards	Comments	Rationale and/or Alternate Proposal
<p>R6. The ISO must know the status of all transmission reactive power resources, voltage regulators and power system stabilizers.</p>	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	
<p>R7 Each TFO must know the status of all transmission reactive power resources, voltage regulators and power system stabilizers within its service area.</p>	<input type="checkbox"/> Support <input checked="" type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose EDTI notes that the measure for this requirement refers to R6.1 which does not exist in the Alberta version of VAR-001-AB-1a.	MR7 should refer to R7 not R6.1.
<p>R8 The ISO, when notified by an operator of a generating unit of the loss of automatic voltage regulator control or by an operator of an aggregated generating facility of the loss of voltage regulating system control, must issue a directive to the operator to maintain or change either its voltage or reactive power.</p>	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	
<p>R9 The ISO must, when it determines it is necessary, regulate transmission voltage and reactive power flow by issuing directives to TFOs to operate the devices necessary to do so.</p>	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	
<p>R10 The ISO must maintain system operating limits by issuing directives to TFOs and operators of generating units for the operation of capacitive and inductive reactive power resources with respect to, without limitation, the following:</p> <ul style="list-style-type: none"> • reactive power generation • voltage • transmission line switching 	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	



2. Alberta Reliability Standards	Comments	Rationale and/or Alternate Proposal
<ul style="list-style-type: none"> • reactive power resource switching, • load shedding 		
<p>R11 The ISO must make arrangements such that there are sufficient reactive power resources to support voltage under first contingency conditions.</p> <p>R11.1 The ISO must make arrangements such that reactive power resources are available in locations within Alberta such that the resources can be applied effectively and as soon as practical when a contingency occurs pursuant to R12.</p>	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	
<p>R12 The ISO must take action to restore system operation within interconnection reliability operating limits or system operating limits established by the ISO in the event of a violation resulting from reactive power resource deficiencies.</p>	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	
<p>R13 The ISO must, after reviewing with the GFO regarding necessary step-up transformer off-load tap changes, provide documentation to the GFO specifying the required tap changes, a timeframe for making the changes, and technical justification for these changes.</p>	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	
<p>R14 The ISO must issue directives necessary to prevent voltage collapse in the event of reactive power resource deficiencies including without limitation to reduce load.</p>	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	
<p>(b) Removals (Alberta Variances)</p> <p>An Alberta variance is a change from the NERC Reliability Standard that the AESO has determined is material.</p> <p>Specifically, the following provisions are deemed as Alberta variances and have been removed from the existing NERC VAR-001-1a requirements.</p>	<input type="checkbox"/> Support	



2. Alberta Reliability Standards	Comments	Rationale and/or Alternate Proposal
<p>NERC requirement R5 was deleted as NERC requires the Purchase-Selling Entity to arrange for reactive resources to satisfy the reactive requirements identified by its Transmission Service Provider. This requirement was deleted as the ISO ensures the reactive power requirements are met in Alberta.</p>	<input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	
<p>(c) Amendments (Alberta Variances) The following revisions have been made throughout this proposed reliability standard:</p> <ul style="list-style-type: none"> - Identified the responsible entities in Alberta. - Applied a consistent writing style and added clarity. - Changed passive terms such as “shall” to “must”. - Developed measures specific to the requirements. 	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert Comments / Reason for Position (if any)</i>	
<p>(d) Other <i>(Stakeholders wishing to comment on specific provisions are requested to copy the provision into this area and provide comments)</i></p>		