



Stakeholder Comparison Comment Rationale Matrix

2010-07-15

AESO AUTHORITATIVE DOCUMENT PROCESS

Alberta Reliability Standard – PRC-018-AB-1 Disturbance Monitoring Equipment Installation and Data Reporting

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>2010/07/15</u>	Contact: <u>Jerry Mossing</u>
Period of Consultation [yyyy/mm/dd]: <u>2010/07/15</u> through <u>2010/08/15</u>	Phone: <u>403-539-2496</u>
Comments From: <u>Nexen Inc.</u>	E-mail: <u>ars_comments@aes0.ca</u>
Date [yyyy/mm/dd]: <u>2010-08-17</u>	

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, and alternate proposals underneath (if any).

**COMPARISON BETWEEN NERC PRC-018-1 AND ALBERTA PRC-018-AB-1
DISTURBANCE MONITORING EQUIPMENT INSTALLATION AND DATA REPORTING**

NERC PRC-018-1	Alberta PRC-018-AB-1	AESO Reason for Difference	Stakeholder Comments	AESO Replies
<p>Purpose Ensure that Disturbance Monitoring Equipment (DME) is installed and that Disturbance data is reported in accordance with regional requirements to facilitate analyses of events.</p>	<p>Purpose The purpose of this reliability standard is to ensure that disturbance monitoring equipment is installed and that disturbance data is reported in accordance with regional requirements to facilitate analyses of events.</p>	<p>Clarified the purpose to align with the content of the reliability standard.</p>		
<p>Applicability 4.1. Transmission Owner. 4.2. Generator Owner.</p>	<p>Applicability This reliability standard applies to:</p> <ul style="list-style-type: none"> • TFOs that own disturbance monitoring equipment as identified in the list as required in requirement R1, as published by the AESO on the AESO website, and as may be amended from time to time by the AESO on notice to market participants. • GFOs that own disturbance monitoring equipment as identified in the list as required in requirement R1, as published by the AESO on the AESO website, and as may be amended from time to time by the AESO on notice to market participants. • ISO 	<p><input type="checkbox"/> New <input checked="" type="checkbox"/> Amended <input type="checkbox"/> Deleted</p> <p>Amended to identify the responsible entities in Alberta.</p>	<p><input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input checked="" type="checkbox"/> Oppose</p> <p>Similar to other comments already provided, Nexen is concerned with the confusion associated with TFO functional entity definition. Nexen suggests that issues surrounding the TFO functional entity must be completed prior to introducing any new standards utilizing the TFO designation.</p>	

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<p>Effective Date Phased in over four years after BOT adoption: Requirements 1 and 2:</p> <ul style="list-style-type: none"> – 50% compliant two years after initial issuance of regional requirements per RELIABILITY STANDARD PRC-002 Requirement 5. – 75% compliant three years after initial issuance of regional requirements per reliability standard PRC-002 R5. – 100% compliant four years after initial issuance of regional requirements per reliability standard PRC-002 R5. <p>Requirements 3 through 6:</p> <ul style="list-style-type: none"> – 100% compliant six months after BOT adoption for already installed DME. – 100% compliant six months after installation for DMEs installed to meet Regional Reliability Organization requirements per reliability standard PRC-002 Requirements 1, 2 and 3. 	<p>Effective Date Ninety (90) days after the date of approval by the Commission.</p>	<p>A ninety day implementation timeline was selected as this reliability standard currently applies to installed disturbance monitoring equipment. Any new installations will be performed in accordance with direction provided by the ISO.</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, and alternate proposal (if any).</i></p>	
<p>R1. Each Transmission Owner and Generator Owner required to install DMEs by its Regional Reliability Organization (reliability standard PRC-002 Requirements 1-3) shall have DMEs installed that meet the following requirements:</p>	<p>R1 The ISO must maintain and publish a list of all disturbance monitoring equipment that this reliability standard applies to, which includes all disturbance monitoring equipment the WECC requires to be installed in Alberta.</p>	<p><input type="checkbox"/> New <input checked="" type="checkbox"/> Amended <input type="checkbox"/> Deleted</p> <p>Amended to identify requirements of the responsible entities in Alberta and for clarity and consistency.</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, and alternate proposal</i></p>	

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<p>R1.1. Internal Clocks in DME devices shall be synchronized to within 2 milliseconds or less of Universal Coordinated Time scale (UTC)</p> <p>R1.2. Recorded data from each Disturbance shall be retrievable for ten calendar days.</p>	<p>R2 Each TFO and GFO that is directed to install disturbance monitoring equipment by the ISO must install disturbance monitoring equipment that meet the following requirements:</p> <p>R2.1 Internal clocks in disturbance monitoring equipment devices must be synchronized to within two milliseconds or less of the Coordinated Universal Time (UTC) scale.</p> <p>R2.2 Recorded disturbance data must be retrievable for at least ten (10) days.</p>	<p>Removed reference to PRC-002 as included in the NERC requirement as these requirements apply to the WECC. The ISO will review new requirements as they are developed by WECC.</p>	<p><i>(if any).</i></p>	
<p>R2. The Transmission Owner and Generator Owner shall each install DMEs in accordance with its Regional Reliability Organization's installation requirements (reliability standard PRC-002 Requirements 1 through 3).</p>	<p>R3 Each TFO and GFO must install disturbance monitoring equipment as directed by the ISO.</p>	<p><input type="checkbox"/> New <input checked="" type="checkbox"/> Amended <input type="checkbox"/> Deleted</p> <p>Amended to identify the responsible entities in Alberta and for clarity and consistency.</p> <p>The ISO will review and implement, as appropriate, relevant requirements and standards that are developed by the WECC.</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, and alternate proposal (if any).</i></p>	

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<p>R3. The Transmission Owner and Generator Owner shall each maintain, and report to its Regional Reliability Organization on request, the following data on the DMEs installed to meet that region’s installation requirements (reliability standard PRC-002 Requirements 1.1, 2.1 and 3.1):</p> <p>R3.1. Type of DME (sequence of event recorder, fault recorder, or dynamic disturbance recorder).</p> <p>R3.2. Make and model of equipment.</p> <p>R3.3. Installation location.</p> <p>R3.4. Operational status.</p> <p>R3.5. Date last tested.</p> <p>R3.6. Monitored elements, such as transmission circuit, bus section, etc.</p> <p>R3.7. Monitored devices, such as circuit breaker, disconnect status, alarms, etc.</p> <p>R3.8. Monitored electrical quantities, such as voltage, current, etc.</p>	<p>R4 Each TFO and GFO must maintain and report, within 30 days of the ISO’s request, the following data on the disturbance monitoring equipment:</p> <p>R4.1 Type of disturbance monitoring equipment, sequence of event recorder, fault recorder or dynamic disturbance recorder.</p> <p>R4.2 Make and model of disturbance monitoring equipment.</p> <p>R4.3 Installation location.</p> <p>R4.4 Operational status.</p> <p>R4.5 Date last tested.</p> <p>R4.6 Monitored elements which may include, without limitation, transmission circuit and bus section.</p> <p>R4.7 Monitored devices which may include, without limitation, circuit breaker, disconnect status and alarms.</p> <p>R4.8 Monitored electrical</p>	<p><input type="checkbox"/> New <input checked="" type="checkbox"/> Amended <input type="checkbox"/> Deleted</p> <p>Amended to identify the responsible entities in Alberta and for clarity and consistency.</p> <p>Split the requirement for TFOs and GFOs to report to the ISO and for the ISO to report to the WECC (refer to R5 in the Alberta reliability standard below).</p> <p>Alberta Variance: Added a time period by which data on disturbance monitoring equipment is to be submitted to the ISO. This was included to add clarity and to make the requirement measurable.</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, and alternate proposal (if any).</i></p>	

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NERC PRC-018-1	Alberta PRC-018-AB-1	AESO Reason for Difference	Stakeholder Comments	AESO Replies
	quantities which may include, without limitation, voltage and current.			
Refer to NERC requirement R3.	R5 The ISO must provide the data received from the TFOs and GFOs in requirement R4 to the WECC within 45 days of the WECC's request.	<input checked="" type="checkbox"/> New <input type="checkbox"/> Amended <input type="checkbox"/> Deleted Alberta Variance: Added a time period by which data on disturbance monitoring equipment is to be submitted to the WECC. This was included to add clarity and to make the requirement measurable.	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose <i>Insert comments, reason for position, and alternate proposal (if any).</i>	
R4. The Transmission Owner and Generator Owner shall each provide Disturbance data (recorded by DMEs) in accordance with its Regional Reliability Organization's requirements (reliability standard PRC-002 Requirement 4).	R6 Each TFO and GFO must provide all disturbance data recorded by disturbance monitoring equipment to the ISO within 30 days of a request. R7 The ISO must provide disturbance data recorded by a GFO's or TFO's disturbance monitoring equipment to the WECC within 60 days of WECC's request.	<input type="checkbox"/> New <input checked="" type="checkbox"/> Amended <input type="checkbox"/> Deleted Split the requirement for TFO and GFO to provide disturbance data to the ISO and for the ISO to provide disturbance data to the WECC. Alberta Variance: Added a time period by which disturbance data recorded by disturbance monitoring equipment is to be submitted to the ISO and to the WECC. This was included to add clarity and to make the requirement measurable.		

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<p>R5. The Transmission Owner and Generator Owner shall each archive all data recorded by DMEs for Regional Reliability Organization-identified events for at least three years.</p>	<p>R8 The ISO must archive all data recorded by disturbance monitoring equipment for all WECC or ISO identified events for at least three years.</p>	<p><input type="checkbox"/> New <input checked="" type="checkbox"/> Amended <input type="checkbox"/> Deleted</p> <p>Amended for clarity and consistency.</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, and alternate proposal (if any).</i></p>	
<p>R6. Each Transmission Owner and Generator Owner that is required by its Regional Reliability Organization to have DMEs shall have a maintenance and testing program for those DMEs that includes:</p> <p>R6.1. Maintenance and testing intervals and their basis.</p> <p>R6.2. Summary of maintenance and testing procedures.</p>	<p>R9 Each TFO and GFO that is directed by the ISO to have disturbance monitoring equipment must implement a maintenance and testing program for disturbance monitoring equipment that includes:</p> <p>R9.1 Maintenance and testing intervals and their basis.</p> <p>R9.2 Summary of maintenance and testing procedures.</p>	<p><input type="checkbox"/> New <input checked="" type="checkbox"/> Amended <input type="checkbox"/> Deleted</p> <p>Amended for clarity and consistency.</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, and alternate proposal (if any).</i></p>	
<p>M1. The Transmission Owner and Generator Owner shall each have evidence that DMEs it is required to have meet the functional requirements specified in Requirement 1 and are installed in accordance with its associated Regional Reliability Organization's requirements (R2).</p>	<p>MR1 A list exists that identifies all disturbance monitoring equipment according to requirement R1.</p> <p>MR2 Measures for this requirement are identified in the sub-measures below:</p> <p>MR2.1 Confirmation exists that the disturbance monitoring</p>	<p><input type="checkbox"/> New <input checked="" type="checkbox"/> Amended <input type="checkbox"/> Deleted</p> <p>Amended to align with requirement R1 and R2.</p>	<p><input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input checked="" type="checkbox"/> Oppose</p> <p>Nexen does not support the requirement to have a confirmation from the AESO in order to be compliant. Nexen submits market participants should not be responsible for</p>	

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	<p>equipment is synchronized as specified in requirement R2.1.</p> <p>MR2.2 Confirmation exists that the disturbance monitoring equipment stores disturbance data as specified in requirement R2.2.</p>		<p>compliance obligations that are dependent upon the actions of another party.</p> <p>Can the AESO outline its rationale exceeding the requirements outlined in the NERC standard (i.e. where submitting evidence is sufficient)?</p> <p>While Nexen acknowledges that a confirmation may be useful instrument in certain circumstances, it should not be a compliance requirement.</p>	
<p>M2. The Transmission Owner and Generator Owner shall each maintain the data listed in Requirements 3.1 through 3.8 for the DMEs installed to meet its Regional Reliability Organization's DME installation requirements.</p> <p>M2.1 The Transmission Owner and Generator Owner shall each have evidence it provided this DME data to its Regional Reliability Organization</p>	<p>MR3 Confirmation exists that disturbance monitoring equipment has been installed as specified in requirement R3.</p>	<p><input type="checkbox"/> New <input checked="" type="checkbox"/> Amended <input type="checkbox"/> Deleted</p> <p>Amended to align with requirement R3.</p>	<p><input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input checked="" type="checkbox"/> Oppose</p> <p>Please see comments provided in MR1 above.</p>	

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within 30 calendar days of a request.				
<p>M3. The Transmission Owner and Generator Owner shall each have evidence it retained and provided recorded Disturbance data to entities in accordance with its associated Regional Reliability Organization's Disturbance data reporting requirements. (R4 R5)</p>	<p>MR4 Confirmation exists that data is maintained and is provided as specified in requirement R4.</p> <p>MR4.1 Data is complete and accurate for each disturbance monitoring equipment device as specified in requirement R4.1</p> <p>MR4.2 Data is complete and accurate for each disturbance monitoring equipment device as specified in requirement R4.2</p> <p>MR4.3 Data is complete and accurate for each disturbance monitoring equipment device as specified in requirement R4.3</p> <p>MR4.4 Data is complete and accurate for each disturbance monitoring equipment device as specified in requirement R4.4.</p> <p>MR4.5 Data is complete and accurate for each disturbance monitoring equipment device as specified in requirement R4.5.</p> <p>MR4.6 Data is complete and</p>	<p><input type="checkbox"/> New <input checked="" type="checkbox"/> Amended <input type="checkbox"/> Deleted</p> <p>Amended to align with requirement R4.</p>	<p><input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input checked="" type="checkbox"/> Oppose</p> <p>Please see comments provided in MR1 above.</p>	

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	<p>accurate for each disturbance monitoring equipment device as specified in requirement R4.6</p> <p>MR4.7 Data is complete and accurate for each disturbance monitoring equipment device as specified in requirement R4.7.</p> <p>MR4.8 Data is complete and accurate for each disturbance monitoring equipment device as specified in requirement R4.8.</p>			
	<p>MR5 Confirmation exists that data is provided as specified in requirement R5.</p>	<p><input checked="" type="checkbox"/> New <input type="checkbox"/> Amended <input type="checkbox"/> Deleted</p> <p>Added to align with requirement R5.</p>	<p><input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input checked="" type="checkbox"/> Oppose</p> <p>Please see comments provided in MR1 above.</p>	
<p>M4. Each Transmission Owner and Generator Owner that is required to install DMEs to meet its Regional Reliability Organization's DME installation requirements, shall have an associated DME maintenance and testing program as defined in Requirement 6.</p>	<p>MR6 Confirmation exists that disturbance data is provided as specified in requirement R6.</p> <p>MR7 Confirmation exists that data is provided as specified in requirement R7.</p>	<p><input type="checkbox"/> New <input checked="" type="checkbox"/> Amended <input type="checkbox"/> Deleted</p> <p>Amended to align with requirement R6 and R7.</p>	<p><input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input checked="" type="checkbox"/> Oppose</p> <p>Please see comments provided in MR1 above.</p>	
	<p>MR8 Confirmation exists that the ISO archived all data recorded by</p>	<p><input checked="" type="checkbox"/> New <input type="checkbox"/> Amended</p>	<p><input type="checkbox"/> Support <input type="checkbox"/> Support with language</p>	

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	disturbance monitoring equipment for all WECC and ISO identified events as specified in requirement R8.	<input type="checkbox"/> Deleted Added to align with requirement R8.	suggestions <input checked="" type="checkbox"/> Oppose Please see comments provided in MR1 above.	
	<p>MR9 Confirmation exists that a written maintenance and testing program was implemented as specified in requirement R9.</p> <p>MR9.1 Interval information is included as specified in requirement R9.1.</p> <p>MR9.2 A summary as specified in requirement R9.2 exists and includes clear and detailed procedures.</p>	<input checked="" type="checkbox"/> New <input type="checkbox"/> Amended <input type="checkbox"/> Deleted Added to align with requirement R9.	<input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input checked="" type="checkbox"/> Oppose Please see comments provided in MR1 above.	
<p>Compliance To view the compliance section D of the NERC reliability standard follow this link: http://www.nerc.com/files/PRC-018-1.pdf</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: http://www.aeso.ca/loadsettlement/17189.html .		
<p>Regional Differences None identified.</p>	None identified.	Not applicable in Alberta		

Definitions	Comments	Rationale and/or Alternate Proposal
<p>(a) New</p> <p>“<i>disturbance monitoring equipment</i>” means devices capable of monitoring and recording system data pertaining to a disturbance, including any or all of the following:</p> <ul style="list-style-type: none"> (i) sequence of event recorders which record equipment response to the disturbance; (ii) fault recorders, which record actual waveform data replicating the system primary voltages and currents and which include protective relays that provide this functionality; and (iii) dynamic <i>disturbance</i> recorders which record incidents that portray system behaviour during disturbances, such as low-frequency (0.1 Hz - 3 Hz) oscillations, abnormal frequency or voltage excursions, and which include protective relays and phasor measurement units that provide this functionality. 	<p> <input type="checkbox"/> Support <input type="checkbox"/> Support with language suggestions <input type="checkbox"/> Oppose </p> <p><i>Insert comments, reason for position, and alternate proposal (if any).</i></p>	
<p>(b) Removals</p> <p>N/A</p>		
<p>(c) Amendments</p> <p>N/A</p>		