

**Comparison of NERC EOP-004-1 to Alberta EOP-004-AB-1  
Disturbance Reporting**

Section	NERC EOP-004-1	Alberta EOP-004-AB-1	Reason for Difference
<b>Purpose</b>	Disturbances or unusual occurrences that jeopardize the operation of the Bulk Electric System, or result in system equipment damage or customer interruptions, need to be studied and understood to minimize the likelihood of similar events in the future.	<u>The purpose of this reliability standard is to ensure that events</u> that jeopardize the operation of the bulk electric system (BES), or result in system equipment damage or customer interruptions, <u>are</u> studied and understood to minimize the likelihood of similar events in the future. <u>To ensure that disturbances and unusual occurrences are reported to WECC and NERC.</u>	Added reporting disturbances to the WECC and NERC as a purpose of this standard.
<b>Applicability</b>	4.1. Reliability Coordinators. 4.2. Balancing Authorities. 4.3. Transmission Operators. 4.4. Generator Operators. 4.5. Load Serving Entities. 4.6. Regional Reliability Organizations.	<u>This reliability standard applies to the entities listed below:</u>  • <u>ISO</u> • <u>TFOs</u> • <u>GFOs</u>	Identify the Alberta entities that the Alberta Reliability Standard applies to.
<b>Effective Date</b>	January 1, 2007	<u>Ten calendar days following approval by the AUC.</u>	To be made effective in Alberta upon approval by the AUC.
<b>Definitions</b>		<u>Italicized terms used in this reliability standard have the meanings as set out in the Alberta Reliability Standards Glossary of Terms and Part 1 of the ISO rules.</u>	Reference to the Alberta Reliability Standards Glossary of terms and definitions section in the ISO rules.
<b>Requirement</b>	R1. Each Regional Reliability Organization shall establish and maintain a Regional		This requirement applies to the WECC and does not apply to an

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	reporting procedure to facilitate preparation of preliminary and final disturbance reports.		Alberta entity.
<b>Measure</b>	<b>M1.</b> The Regional Reliability Organization shall have and provide upon request as evidence, its current regional reporting procedure that is used to facilitate preparation of preliminary and final disturbance reports. (Requirement 1)		
<b>Requirement</b>	<b>R2.</b> A Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator or Load Serving Entity shall promptly analyze Bulk Electric System disturbances on its system or facilities.	<p><b><u>R1</u></b> The ISO must promptly review events as described in Appendix 1 to determine if a “NERC Interconnection Reliability Operating Limit and Preliminary Disturbance Report” needs to be completed.</p> <p><b><u>R2</u></b> The ISO must analyze events on the AIES in accordance with OPP 1304</p> <p><b><u>R3</u></b> TFOs and GFOs must analyze disturbances on its system or facilities as requested by the ISO in accordance with OPP 1304.</p>	<p>Identify the responsible entities in Alberta.</p> <p>Revised NERC R2 into 3 separate requirements for determining if a preliminary disturbance report is required and to identify the responsibilities and policies to be followed for analyzing events on the AIES.</p> <p>Change the passive term “shall” to “must”.</p> <p>Appendix 1 lists revised criteria for application in Alberta that is used to determine when to prepare a “NERC IROL Preliminary Disturbance Report”.</p>

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			<b>Alberta Variance<sup>1</sup>:</b> Appendix 1 omits some of the criteria in the NERC reliability standard; refer to Appendix 1 for details.
<b>Measure</b>	<b>M2.</b> Each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and Load-Serving Entity that has a reportable incident shall have and provide upon request evidence that could include, but is not limited to, the preliminary report, computer printouts, operator logs, or other equivalent evidence that will be used to confirm that it prepared and delivered the NERC Interconnection Reliability Operating Limit and Preliminary Disturbance Reports to NERC within 24 hours of its recognition as specified in Requirement 3.1.	<p><u><b>MR1</b> Preliminary disturbance reports exist for events as described in Appendix 1.</u></p> <p><u><b>MR2</b> An AIES Disturbance Report exists for each event selected for further assessment in accordance with OPP 1304.</u></p> <p><u><b>MR3</b> Information provided meets the requirements of the request.</u></p>	Identify the appropriate measures for the requirements.

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

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<b>Requirement</b>	<b>R3.</b> A Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator or Load Serving Entity experiencing a reportable incident shall provide a preliminary written report to its Regional Reliability Organization and NERC.	<b>R4</b> <u>If a reportable event occurs, the ISO must provide a NERC "Interconnection Reliability Operating Limit and Preliminary Disturbance Report", as included in Appendix 1, to WECC and NERC within 24 hours of being recognized.</u>	Identify the responsible entity in Alberta and the specific party that receives the report.  Change the passive term "shall" to "must".  Included timing requirement in original NERC requirement R3.1 in Alberta requirement R4.
<b>Measure</b>		<b>MR4</b> <u>Written confirmation from WECC exists that shows the ISO provided preliminary disturbance reports to WECC within 24 hours of the event being recognized.</u>	Identify the appropriate measure for the requirement.
<b>Requirement</b>	<b>R3.1.</b> The affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator or Load Serving Entity shall submit within 24 hours of the disturbance or unusual occurrence either a copy of the report submitted to DOE, or, if no DOE report is required, a copy of the NERC Interconnection Reliability Operating Limit and Preliminary Disturbance Report form. Events that are not identified until some time after they occur shall be reported within 24 hours of being recognized.		Requirement to submit the report within 24 hours is included in Alberta requirement R4.

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Requirement	<b>R3.2.</b> Applicable reporting forms are provided in Attachments 1-EOP-004 and 2- EOP-004.		This is a reference and is not a requirement.
Requirement	<b>R3.3.</b> Under certain adverse conditions, e.g., severe weather, it may not be possible to assess the damage caused by a disturbance and issue a written Interconnection Reliability Operating Limit and Preliminary Disturbance Report within 24 hours. In such cases, the affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity shall promptly notify its Regional Reliability Organization(s) and NERC, and verbally provide as much information as is available at that time. The affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity shall then provide timely, periodic verbal updates until adequate information is available to issue a written Preliminary Disturbance Report.	<b>R5</b> Under certain conditions, <u>such as</u> severe weather, it may not be possible to assess the damage caused by a disturbance and issue a written “Interconnection Reliability Operating Limit and Preliminary Disturbance Report” within 24 hours. In such cases, the <u>ISO must</u> promptly notify <u>the Vancouver Reliability Coordinator (VRC)</u> , and verbally provide as much information as is available at that time. If the ISO makes such notification, the <u>ISO must</u> then provide timely, periodic verbal updates until adequate information is available to issue a written <u>“NERC Interconnection Reliability Operating Limit and Preliminary Disturbance Report”</u> .	Identify the responsible entity in Alberta and the specific party that receives the notification.  Change the passive term “shall” to “must”.  “NERC Interconnection Reliability Operating Limit and Preliminary Disturbance Report” was misnamed in the NERC reliability standard as “Preliminary Disturbance Report”.
Measure	<b>M3.</b> Each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and/or Load Serving Entity that has a reportable incident shall have and provide upon request evidence that could include, but is not limited to, operator logs, voice recordings or transcripts of voice recordings,	<b>MR5</b> <u>Shift logs, voice recordings or electronic communications exist to confirm that the requirement is met.</u>	Identify the appropriate measure for the requirement.

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	electronic communications, or other equivalent evidence that will be used to confirm that it provided information verbally as time permitted, when system conditions precluded the preparation of a report in 24 hours. (Requirement 3.3)		
<b>Requirement</b>	<p><b>R3.4.</b> If, in the judgment of the Regional Reliability Organization, after consultation with the Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity in which a disturbance occurred, a final report is required, the affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity shall prepare this report within 60 days. As a minimum, the final report shall have a discussion of the events and its cause, the conclusions reached, and recommendations to prevent recurrence of this type of event. The report shall be subject to Regional Reliability Organization approval.</p>	<p><b>R6</b> If, in <u>WECC's</u> judgment, after consultation with the <u>ISO</u>, a final report is required, the <u>ISO must</u> prepare this report <u>in accordance with "WECC Reporting Procedures for System Events"</u>.</p>	<p><b>Alberta Variance<sup>2</sup>:</b> As a member of the WECC, the AESO follows the "WECC Reporting Procedures for System Events"<sup>3</sup>. It is the responsibility of the WECC to align their procedure with the NERC requirement to prepare a disturbance report within 60 days.</p> <p>Identify the responsible entity in Alberta.</p> <p>Change the passive term "shall" to "must".</p> <p>Regional Reliability Organization approval of the disturbance report</p>

<sup>2</sup> Alberta Variance is a change from the US Reliability Standard that the AESO has determined is material.

<sup>3</sup> Follow this link for the "WECC Reporting Procedures for System Events"

[http://www.wecc.biz/documents/library/procedures/WECC\\_Reporting\\_Procedure\\_System\\_Events\\_Final1.pdf](http://www.wecc.biz/documents/library/procedures/WECC_Reporting_Procedure_System_Events_Final1.pdf)

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			was removed from the AB requirement as it is not a responsibility of the ISO.
<b>Measure</b>		<u>MR6 Written confirmation exists that shows the ISO provided a final report in accordance with "WECC Reporting Procedures for System Events"</u>	Identify the appropriate measure for the requirement.
<b>Requirement</b>	<b>R4.</b> When a Bulk Electric System disturbance occurs, the Regional Reliability Organization shall make its representatives on the NERC Operating Committee and Disturbance Analysis Working Group available to the affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity immediately affected by the disturbance for the purpose of providing any needed assistance in the investigation and to assist in the preparation of a final report.		Requirement does not apply to an entity in Alberta.
<b>Requirement</b>	<b>R5.</b> The Regional Reliability Organization shall track and review the status of all final report recommendations at least twice each year to ensure they are being acted upon in a timely manner. If any recommendation has not been acted on within two years, or if Regional Reliability Organization tracking and review indicates at any time that any recommendation is not being acted on with		Requirement does not apply to an entity in Alberta.

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	sufficient diligence, the Regional Reliability Organization shall notify the NERC Planning Committee and Operating Committee of the status of the recommendation(s) and the steps the Regional Reliability Organization has taken to accelerate implementation.		
<b>Procedures</b>			
<b>Compliance</b>	<p><b>1. Compliance Monitoring Process</b></p> <p><b>1.1. Compliance Monitoring Responsibility</b> NERC shall be responsible for compliance monitoring of the Regional Reliability Organizations. Regional Reliability Organizations shall be responsible for compliance monitoring of Reliability Coordinators, Balancing Authorities, Transmission Operators, Generator Operators, and Load-serving Entities.</p> <p><b>1.2. Compliance Monitoring and Reset Time Frame</b> One or more of the following methods will be used to assess compliance:</p> <ul style="list-style-type: none"> <li>- Self-certification (Conducted annually with submission according to schedule.)</li> <li>- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)</li> <li>- Periodic Audit (Conducted once every three years according to schedule.)</li> <li>- Triggered Investigations (Notification of an</li> </ul>		<p>There is no compliance section currently proposed in the Alberta Reliability Standards.</p> <p>A compliance program will be developed at a later date for Alberta Reliability Standards that recognizes the compliance monitoring and enforcement structure in Alberta.</p> <p>This approach is deemed consistent with the existing ISO Rules.</p>

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	<p>investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.) The Performance-Reset Period shall be 12 months from the last finding of noncompliance.</p> <p><b>1.3. Data Retention</b> Each Regional Reliability Organization shall have its current, in-force, regional reporting procedure as evidence of compliance. (Measure 1) Each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and/or Load Serving Entity that is either involved in a Bulk Electric System disturbance or has a reportable incident shall keep data related to the incident for a year from the event or for the duration of any regional investigation, whichever is longer. (Measures 2 through 4) If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer. Evidence used as part of a triggered investigation shall</p>		

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	<p>be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor, The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.</p> <p><b>1.4. Additional Compliance Information</b> See Attachments: - EOP-004 Disturbance Reporting Form - Table 1 EOP-004</p> <p><b>2. Levels of Non-Compliance for a Regional Reliability Organization</b> <b>2.1. Level 1:</b> Not applicable. <b>2.2. Level 2:</b> Not applicable. <b>2.3. Level 3:</b> Not applicable. <b>2.4. Level 4:</b> No current procedure to facilitate preparation of preliminary and final disturbance reports as specified in R1.</p> <p><b>3. Levels of Non-Compliance for a Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and Load- Serving Entity:</b> <b>3.1. Level 1:</b> There shall be a level one non-compliance if any of the following conditions exist: <b>3.1.1</b> Failed to prepare and deliver the NERC</p>		

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	Interconnection Reliability Operating Limit and Preliminary Disturbance Reports to NERC within 24 hours of its recognition as specified in Requirement 3.1 <b>3.1.2</b> Failed to provide disturbance information verbally as time permitted, when system conditions precluded the preparation of a report in 24 hours as specified in R3.3 <b>3.1.3</b> Failed to prepare a final report within 60 days as specified in R3.4 <b>3.2. Level 2:</b> Not applicable. <b>3.3. Level 3:</b> Not applicable <b>3.4. Level 4:</b> Not applicable.		
<b>Regional Differences</b>	None identified.	None identified.	Not applicable in Alberta

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## Appendix 1

### Interconnection Reliability Operating Limit and Preliminary Disturbance Reporting Criteria and Form

The NERC “Interconnection Reliability Operating Limit and Preliminary Disturbance Reports” are to be made for any of the following events<sup>4</sup>:

1. The loss of a bulk power transmission component that results in frequency or voltage going below the *underfrequency* or *under voltage load shed* points.
2. The occurrence of an interconnected system separation or system islanding or both.
3. Loss of 2000 MW or more of generation or *load* in Alberta.
4. Equipment failures/system operational actions which result in the loss of 300 MW of *demand* for more than 15 minutes.
5. Firm *load* shedding 100 MW or more to maintain continuity of the *BES*.
6. Any action taken by a generator operator, *TFO*, *WO*, *WSP*, transmission connected end use customer or *ISO* that results in:
  - a) Sustained voltage excursions equal to or greater than  $\pm 10\%$ , or
  - b) major damage to power system components, or
  - c) failure, degradation, or misoperation of system protection, special protection schemes, *remedial action schemes*, or other operating systems that do not require operator intervention, which did result in, or could have resulted in, a system disturbance as defined by Steps 1 through 5 above.
7. An *IROL* violation.

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<sup>4</sup> **Alberta variance:** Omitted some impractical criteria identified in Attachment 1 of the NERC reliability standard that identifies when a “NERC IROL and Preliminary Disturbance Report” is to be prepared. These reports are to be prepared within 24 hours of an event and this makes it impractical to prepare this report for events that result in:

- Modification of operating procedures.
- Modification of equipment to prevent reoccurrence of the event.
- Identification of valuable lessons learned.
- Identification of non-compliance with NERC standards or policies.
- Identification of a disturbance that is beyond recognized criteria, i.e. three phase fault with breaker failure etc.
- The Operating Committee requesting the event to be submitted to Disturbance Analysis Working Group (DAWG) for review because of the nature of the disturbance and the insight and lessons the electricity supply and delivery industry could learn.

Note: An Alberta Variance is a change from the US Reliability Standard that the AESO has determined is material.

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**NERC Interconnection Reliability Operating Limit and Preliminary Disturbance Report**

Check here if this is an Interconnection Reliability Operating Limit (IROL) violation report.

1.	Organization filing report.		
2.	Name of person filing report.		
3.	Telephone number.		
4.	Date and time of disturbance. Date:(mm/dd/yy) Time/Zone:		
5.	Did the disturbance originate in your system?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6.	Describe disturbance including: cause, equipment damage, critical services interrupted, system separation, key scheduled and actual flows prior to disturbance and in the case of a disturbance involving a special protection or remedial action scheme, what action is being taken to prevent recurrence.		
7.	Generation tripped. MW Total List generation tripped		
8.	Frequency. Just prior to disturbance (Hz): Immediately after disturbance (Hz max.): Immediately after disturbance (Hz min.):		
9.	List transmission lines tripped (specify voltage level of each line).		
10.	Demand tripped (MW): Number of affected Customers:	Firm	Interruptible
11.	Restoration time.	Initial	Final
	Transmission:		
	Generation:		
	Demand:		

Note. Copies to be sent to:

- [WECC at disturbancereports@wecc.biz](mailto:WECC.at.disturbancereports@wecc.biz)

[NERC at info@nerc.com.](mailto:NERC.at.info@nerc.com)

### Proposed Terms for the ARS Glossary:

- “*bulk electric system*” or “*BES*” as defined by the Regional Reliability Organization, means the electrical generation resources, transmission lines, *interconnections*, with neighbouring *systems*, and associated equipment, generally operated at voltages of 100kV or higher; radial *transmission facilities* serving only *load* with one transmission source are generally not included in this definition.
- “*system*” means a combination of generation, transmission, and distribution components.

### Existing Defined Terms Used in this Standard:

(As included in the ISO Rules Definitions or Alberta Reliability Standards

Glossary)

- *Alberta Interconnected Electric System or AIES*
- *balancing authority*
- *generating facility owner or GFO*
- *Independent System Operator or ISO*
- *interconnection reliability operating limit or IROL*
- *reliability standard*
- *remedial action scheme*
- *transmission facility owner or TFO*
- *transmission operator*
- *underfrequency*
- *under voltage load shed or UVLS*
- *Vancouver Reliability Coordinator or VRC*
- *Western Electricity Coordinating Council or WECC*
- *wire owner or WO*
- *wire services provider or WSP*