

Comparison between NERC TOP-005-1 and Alberta TOP-005-AB-1 Operational Reliability Information			
Section	NERC TOP-005-1	Alberta TOP-005-AB-1	Reason for difference
Purpose	To ensure reliability entities have the operating data needed to monitor system conditions within their areas.	<u>The purpose of this <i>reliability standard</i> is to ensure entities responsible for reliable power system operation have the operating data needed to monitor system conditions within their areas.</u>	Reworded to clarify “reliability entities”.
Applicability	4.1. Transmission Operators. 4.2. Balancing Authorities. 4.3. Reliability Coordinators. 4.4. Purchasing Selling Entities.	<u>Independent System Operator</u> <u>pool participants</u> <u>transmission facility owners</u>	Identified the responsible entities in Alberta.
Effective Date	November 1, 2006	<u>This <i>reliability standard</i> becomes effective 120 days after the date approved by the Commission.</u>	Allows adequate time for implementation in Alberta.
Definitions		<u>Italicized terms used in this <i>reliability standard</i> have the meanings as set out in Part 1 of the <i>ISO Rules</i>, including, but not limited to, the following terms:</u> <u><i>area control error or ACE</i>¹</u> <u><i>Balancing Authority</i></u> <u><i>Commission</i></u> <u><i>compliance monitor</i></u> <u><i>interchange schedule</i></u> <u><i>interchange transaction</i></u> <u><i>interconnection</i></u> <u><i>Interconnection Reliability</i></u>	Added definitions section to the Alberta reliability standard.

¹ Where a defined term is followed by an acronym, the acronym may be used as an alternative to the defined term.

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		<u>Operating Limit or IROL</u> <u>Independent System Operator or ISO</u> <u>North American Electric Reliability Corporation or NERC</u> <u>pool participants</u> <u>operating reserve</u> <u>peak demand</u> <u>reliability standard</u> <u>remedial action scheme</u> <u>System Operating Limits</u> <u>Transmission Operator</u> <u>transmission facility owners or TFOs</u>	
Requirements	R1. Each Transmission Operator and Balancing Authority shall provide its Reliability Coordinator with the operating data that the Reliability Coordinator requires to perform operational reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.	R1 <u>The ISO must provide the Vancouver Reliability Coordinator with the operating data that the Vancouver Reliability Coordinator reasonably requires to perform operational reliability assessments and to coordinate reliable operations within the Vancouver Reliability Coordinator area.</u>	Alberta Variance²: R1 was modified to include a condition that the ISO will provide operating data to the Vancouver Reliability Coordinator that the Vancouver Reliability Coordinator reasonably requires. The ISO will provide to the Vancouver Reliability Coordinator operating data that is deemed to be reasonable in accordance with the AESO/WECC

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

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			<p>Operating Agreement.</p> <p>Entities are specific to the Alberta Reliability Framework. R1 was also modified to replace the passive term “shall” with “must”.</p>
	<p>R1.1. Each Reliability Coordinator shall identify the data requirements from the list in Attachment 1-TOP-005-0 “Electric System Reliability Data” and any additional operating information requirements relating to operation of the bulk power system within the Reliability Coordinator Area.</p>		<p>Identifying data requirements in R1.1 was removed as it only applies to the Vancouver Reliability Coordinator and is not applicable to an Alberta entity.</p>
		<p><u>R2 Upon request, each TFO must provide to the ISO, the operating data that are necessary to allow ISO to perform operational reliability assessments and to coordinate reliable operations. TFOs must provide the types of data as listed in Appendix 1-TOP-005-AB-0 “Electric System Reliability Data,” unless otherwise agreed to by the ISO.</u></p>	<p>Alberta Requirement R2 was added for TFOs to provide operating data to the ISO. The ISO is responsible for the reliable operation of the AIES</p>

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	R2. As a condition of receiving data from the Interregional Security Network (ISN), each ISN data recipient shall sign the NERC Confidentiality Agreement for “Electric System Reliability Data.”		Alberta Variance³: The signing of the NERC Confidentiality Agreement to receive data from the Interregional Security Network (ISN) in R2 was removed, as it requires individual entities to sign the agreement with NERC. This is not related to reliability in Alberta.
	R3. Upon request, each Balancing Authority and Transmission Operator shall provide to other Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability, the operating data that are necessary to allow these Balancing Authorities and Transmission Operators to perform operational reliability assessments and to coordinate reliable operations. Balancing Authorities and Transmission Operators shall provide the types of data as listed in Attachment 1-TOP-005-0 “Electric System Reliability Data,” unless otherwise agreed to by the	R3 Upon request, <u>the ISO must</u> provide to <u>other Balancing Authorities and Transmission Operators external to Alberta</u> with immediate responsibility for operational reliability, the operating data that are necessary to allow these <i>Balancing Authorities and Transmission Operators external to Alberta</i> to perform operational reliability assessments and to coordinate reliable operations. <u>The ISO must</u> provide the types of data as listed in Attachment 1-TOP-005- <u>AB-0</u> “Electric System Reliability Data,” unless otherwise agreed to by <u>these Balancing Authorities</u>	Expanded NERC requirement R3 into 2 requirements (R3 and R4) for sharing operating data with reliability entities within and outside Alberta. Retains the intent of NERC requirement R3. R3 was modified to replace the passive term “shall” with “must”. Used terms specific to the Alberta Reliability Framework as appropriate.

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	Balancing Authorities and Transmission Operators with immediate responsibility for operational reliability.	and <i>Transmission Operators</i> .	
		R4 <u>Upon request, the <i>ISO</i> must provide to <i>TFOs</i> with immediate responsibility for operational reliability, the operating data that are necessary to allow <i>TFOs</i> to perform operational reliability assessments and to coordinate reliable operations. The <i>ISO</i> must provide the types of data as listed in Attachment 1-TOP-005-AB-0 “Electric System Reliability Data,” unless otherwise agreed to by the <i>TFOs</i> and with immediate responsibility for operational reliability.</u>	Expanded NERC requirement R3 into 2 requirements (R3 and R4) for sharing operating data with reliability entities within and outside Alberta. Retains the intent of NERC requirement R3. Used terms specific to the Alberta Reliability Framework.
	R4. Each Purchasing-Selling Entity shall provide information as requested by its Host Balancing Authorities and Transmission Operators to enable them to conduct operational reliability assessments and coordinate reliable operations.	R5 <u>Upon request, each <i>pool participant</i> must provide to the <i>ISO</i> information that is necessary to enable the <i>ISO</i> to conduct operational reliability assessments and coordinate reliable operations.</u>	Used terms specific to the Alberta Reliability Framework.

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Procedures	None	None	
Measures	M1. Evidence that the Reliability Coordinator, Balancing Authority, Transmission Operator, and Purchasing-Selling Entity is providing the information required, within the time intervals specified, and in a format agreed upon by the requesting entities.	<u>MR1. The ISO must provide to the compliance monitor, within 30 days of a request, a confirmation letter dated and endorsed by an authorized representative of the Vancouver Reliability Coordinator confirming that the ISO has provided the data as requested by the Vancouver Reliability Coordinator. The letter will state whether the Vancouver Reliability Coordinator has received the data from the ISO in the time interval specified and the format agreed upon.</u>	Modified to assign a measure to each requirement, identify the responsible Alberta entity and specify the type of evidence to be provided for application in Alberta.
		<u>MR2. The TFO must provide to the compliance monitor, within 30 days of a request, a confirmation letter dated and endorsed by an authorized representative of the ISO confirming that the TFO has provided the data requested by the ISO. The letter will state whether the ISO has received the data from the TFO in the time interval specified and the format agreed upon.</u>	Modified to assign a measure to each requirement, identify the responsible Alberta entity and specify the type of evidence to be provided for application in Alberta.

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		<u>MR3. The ISO must provide to the compliance monitor, within 30 days of a request, confirmation letters dated and endorsed by authorized representatives of the Balancing Authorities and Transmission Operators external to Alberta, confirming that the ISO has provided the data requested by the Balancing Authorities and TFOs. Each letter will state whether the Balancing Authority or Transmission Operator has received the data from the ISO in the time interval specified and the format agreed upon.</u>	Modified to assign a measure to each requirement, identify the responsible Alberta entity and specify the type of evidence to be provided for application in Alberta.
		<u>MR4. The ISO must provide to the compliance monitor, within 30 days of a request, a confirmation letter dated and endorsed by an authorized representative of the TFO confirming that the ISO has provided the data requested. The letter will state whether the TFO has received the data from the ISO in the time interval specified and the format agreed upon.</u>	Modified to assign a measure to each requirement, identify the responsible Alberta entity and specify the type of evidence to be provided for application in Alberta.

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		<u>MR5. The pool participant must provide to the compliance monitor, within 30 days of a request, a confirmation letter dated and endorsed by an authorized representative of the ISO confirming that the pool participant has provided the data requested by the ISO. The letter will state whether the ISO has received the data from the pool participant in the time interval specified and the format agreed upon.</u>	Modified to assign a measure to each requirement, identify the responsible Alberta entity and specify the type of evidence to be provided for application in Alberta.
Compliance	<p>1. Compliance Monitoring Process</p> <p>1.1. Compliance Monitoring Responsibility</p> <p>Self-Certification: Entities shall annually self-certify compliance to the measures as required by its Regional Reliability Organization.</p> <p>Exception Reporting: Each Region shall report compliance and violations to NERC via the NERC compliance reporting process.</p> <p>1.2. Compliance Monitoring Period and Reset Time Frame</p> <p>Periodic Review: Entities will be selected for operational reviews at</p>		<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>least every three years. One calendar year without a violation from the time of the violation.</p> <p>1.3. Data Retention Not specified.</p> <p>1.4. Additional Compliance Information Not specified.</p> <p>2. Levels of Non-Compliance</p> <p>2.1. Level 1: Each entity responsible for reporting information under Requirements R1 to R5 is providing the requesting entities with the data required, in specified time intervals and format, but there are problems with consistency of delivery identified in the measuring process that need remedy (e.g., the data is not supplied consistently due to equipment malfunctions, or scaling is incorrect).</p> <p>2.2. Level 2: N/A.</p> <p>2.3. Level 3: N/A.</p> <p>2.4. Level 4: Each entity responsible for reporting information under Requirements R1 to R5 is not</p>		

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	providing the requesting entities with data with the specified content, timeliness, or format. The information missing is included in the requesting entity's list of data.		
Regional Differences	None identified.		
Attachment / Appendix	<p>Attachment 1-TOP-005-0 Electric System Reliability Data This Attachment lists the types of data that Reliability Coordinators, Balancing Authorities, and Transmission Operators are expected to provide, and are expected to share with each other.</p> <p>1. The following information shall be updated at least every ten minutes:</p> <p>1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint:</p> <p>1.1.1 Status. 1.1.2 MW or ampere loadings. 1.1.3 MVA capability.</p>	<p>Appendix 1 - TOP-005-AB-0 "Electric System Reliability Data"</p> <p><u>Appendix 1</u> lists the types of data that the <i>ISO, TFOs, Vancouver Reliability Coordinator, Balancing Authorities, and Transmission Operators</i> are expected to provide and share with each other.</p> <p>1. The following data must be updated at least every ten minutes:</p> <p>1.1. Transmission data. Transmission data for all <i>interconnections</i> plus all other facilities considered key, from a reliability standpoint:</p> <p>1.1.1 Status. 1.1.2 MW or ampere loadings. 1.1.3 MVA capability. 1.1.4 Transformer tap and phase</p>	<p>Document format and writing style.</p> <p>Used terms specific to the Alberta Reliability Framework.</p>

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	<p>1.1.4 Transformer tap and phase angle settings.</p> <p>1.1.5 Key voltages.</p> <p>1.2. Generator data.</p> <p>1.2.1 Status.</p> <p>1.2.2 MW and MVAR capability.</p> <p>1.2.3 MW and MVAR net output.</p> <p>1.2.4 Status of automatic voltage control facilities.</p> <p>1.3. Operating reserve.</p> <p>1.3.1 MW reserve available within ten minutes.</p> <p>1.4. Balancing Authority demand.</p> <p>1.4.1 Instantaneous.</p> <p>1.5. Interchange.</p> <p>1.5.1 Instantaneous actual interchange with each Balancing Authority.</p> <p>1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities.</p> <p>1.5.3 Interchange Schedules for the next 24 hours.</p> <p>1.6. Area Control Error and</p>	<p>angle settings.</p> <p>1.1.5 Key voltages.</p> <p>1.2. Generator data.</p> <p>1.2.1 Status.</p> <p>1.2.2 MW and MVAR capability.</p> <p>1.2.3 MW and MVAR net output.</p> <p>1.2.4 Status of automatic voltage control facilities.</p> <p>1.3. <i>Operating reserve.</i></p> <p>1.3.1 MW reserve available within ten minutes.</p> <p>1.4. <i>Balancing Authority</i> demand.</p> <p>1.4.1 Instantaneous.</p> <p>1.5. <i>Interchange.</i></p> <p>1.5.1 Instantaneous actual <i>interchange</i> with each <i>Balancing Authority</i>.</p> <p>1.5.2 Current <i>interchange schedules</i> with each <i>Balancing Authority</i> by individual <i>interchange transaction</i>, including <i>interchange</i> identifiers, and reserve</p>	

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	<p>frequency.</p> <p>1.6.1 Instantaneous area control error.</p> <p>1.6.2 Clock hour area control error.</p> <p>1.6.3 System frequency at one or more locations in the Balancing Authority.</p> <p>2. Other operating information updated as soon as available.</p> <p>2.1. Interconnection Reliability Operating Limits and System Operating Limits in effect.</p> <p>2.2. Forecast of operating reserve at peak, and time of peak for current day and next day.</p> <p>2.3. Forecast peak demand for current day and next day.</p> <p>2.4. Forecast changes in equipment status.</p> <p>2.5. New facilities in place.</p> <p>2.6. New or degraded special protection systems.</p> <p>2.7. Emergency operating procedures in effect.</p> <p>2.8. Severe weather, fire, or earthquake.</p> <p>2.9. Multi-site sabotage.</p>	<p>responsibilities.</p> <p>1.5.3 <i>Interchange schedules</i> for the next 24 hours.</p> <p>1.6. <i>Area control error</i> and frequency.</p> <p>1.6.1 <i>Instantaneous area control error.</i></p> <p>1.6.2 <i>Clock hour area control error.</i></p> <p>1.6.3 System frequency at one or more locations in the <i>Balancing Authority.</i></p> <p>2. <u>The following information must be updated as soon as the information becomes available.</u></p> <p>2.1. <i>Interconnection Reliability Operating Limits and System Operating Limits</i> in effect.</p> <p>2.2. Forecast of <i>operating reserve</i> at peak, and time of peak for current day and next day.</p> <p>2.3. Forecast <i>peak demand</i> for current day and next day.</p> <p>2.4. Forecast changes in equipment</p>	

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		status. 2.5. New facilities in place. 2.6. New or degraded <i>remedial action schemes</i> . 2.7. Emergency operating procedures in effect. 2.8. Severe weather, fire, or earthquake. 2.9. Multi-site sabotage.	
Guidelines	None	None	