

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 reliability standard is to require entities responsible for reliable power system operation to 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>This reliability standard applies to the entities listed below:</u> <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		To appear in the footer of the reliability standard.
Definitions		<u>Italicized terms used in this <i>reliability standard</i> have the meanings as set out in the <u>Alberta Reliability Standards Glossary of Terms and Part 1 of the ISO Rules.</u></u>	Added definitions section to the Alberta reliability standard.
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	R1 <u>The ISO must provide the <u>Vancouver Reliability Coordinator (VRC)</u> with the operating data that the <u>VRC</u> <u>reasonably</u> requires to perform operational reliability assessments</u>	Alberta Variance¹: R1 was modified to include a condition that the ISO will provide operating data to the VRC that the VRC <u>reasonably</u> requires. The ISO will provide to the VRC operating data

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

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
	reliability assessments and to coordinate reliable operations within the Reliability Coordinator Area.	and to coordinate reliable operations within the <u>VRC</u> area.	that is deemed to be reasonable in accordance with the AESO/WECC Operating Agreement. Entities identified are specific to the Alberta Reliability Framework. Replaced the passive term “shall” with “must”.
	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.		Identifying data requirements in R1.1 was removed as it only applies to the VRC and is not applicable to an Alberta entity.
		R2 <u>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 of this reliability standard, unless otherwise agreed to by the ISO.</u>	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

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
	<p>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.”</p>		<p>Alberta Variance²: 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.</p>
	<p>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 Balancing</p>	<p>R3 Upon request, <u>the ISO must</u> provide to <u>other</u> balancing authorities and transmission operators <u>external to Alberta</u> with immediate responsibility for operational reliability, the operating data that is necessary to allow these balancing authorities and transmission operators <u>external to Alberta</u> to perform operational reliability assessments and to coordinate reliable operations. <u>The ISO must</u> provide the types of data as listed in Appendix 1 of this reliability standard, unless otherwise agreed to by <u>these</u> balancing authorities and transmission operators.</p>	<p>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. Replaced the passive term “shall” with “must”. Used terms specific to the Alberta Reliability Framework as appropriate.</p>

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

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
	Authorities and Transmission Operators with immediate responsibility for operational reliability.		
		<p>R4 <u>Upon request, the ISO must provide to TFOs with immediate responsibility for operational reliability, the operating data that is necessary to allow TFOs to perform operational reliability assessments and to coordinate reliable operations. The ISO must provide the types of data as listed in Appendix 1 of this reliability standard, unless otherwise agreed to by the TFOs and with immediate responsibility for operational reliability.</u></p>	<p>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.</p>
	<p>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.</p>	<p>R5 <u>Each pool participant must provide to the ISO, operating data as specified in other ISO rules that is necessary to enable the ISO to conduct operational reliability assessments and coordinate reliable operations.</u></p>	<p>Used terms specific to the Alberta Reliability Framework.</p>

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
Procedures	None	None	
Measures	<p>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.</p>	<p><u>The following measures correspond to the requirements identified in Section 5 of this <i>reliability standard</i>. For example, MR1 is the measure for R1.</u></p> <p>These measures will be used by the ISO in carrying out its <i>compliance monitoring</i> duties in accordance with <i>ISO rule 12</i>. The ISO may consider other data and information, including any provided by a <i>market participant</i>.</p> <p><u>MR1. A confirmation letter from the ISO is provided to the compliance monitor within 30 days of a request. The letter confirms that the ISO has provided the data as requested by the VRC. The letter is dated and signed by an authorized representative of the VRC.</u></p>	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.
		<p><u>MR2. A confirmation letter from the TFO is provided to the compliance monitor within 30 days of request. The letter confirms that the TFO has provided the data as requested by ISO, and is acceptable to the ISO. The letter is dated and signed by an authorized</u></p>	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.



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
		<u>representative of the ISO.</u>	
		<u>MR3. A confirmation letter from the ISO is provided to the compliance monitor within 30 days of request. The letter confirms that the ISO has provided the data as requested by the balancing authorities or transmission operators. The letter is dated and signed by an authorized representative of the balancing authorities and transmission operators external to Alberta.</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. A confirmation letter from the ISO is provided to the compliance monitor within 30 days of request. The letter confirms that the ISO has provided the data as requested by the TFO. The letter is dated and signed by an authorized representative of the TFO.</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.

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
		<u>MR5. A confirmation letter from the pool participant is provided to the compliance monitor within 30 days of a request. The letter confirms that the pool participant has provided the data as requested by ISO, and is acceptable to the ISO. The letter is dated and signed by an authorized representative of the ISO.</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. 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 least every three years. One calendar year without a violation from the time</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>

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
	<p>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 providing the requesting entities with data with the specified content, timeliness, or format. The information</p>		

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
	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: 1.1. Transmission data. Transmission data for all Interconnections plus all other facilities considered key, from a reliability standpoint: 1.1.1 Status. 1.1.2 MW or ampere loadings. 1.1.3 MVA capability. 1.1.4 Transformer tap and phase angle settings. 1.1.5 Key voltages. 1.2. Generator data. 1.2.1 Status.</p>	<p><u>Appendix 1 - TOP-005-AB-0</u> “Electric System Reliability Data”</p> <p><u>Appendix 1</u> lists the types of data that the <u>ISO, TFOs, VRC</u>, balancing authorities, and transmission operators are expected to provide and share with each other.</p> <p>1. The following data must be updated at least every ten minutes: 1.1. Transmission data. Transmission data for all interconnections plus all other facilities considered key, from a reliability standpoint: 1.1.1 Status. 1.1.2 MW or ampere loadings. 1.1.3 MVA capability. 1.1.4 Transformer tap and phase angle settings. 1.1.5 Key voltages. 1.2. Generator data.</p>	<p>Document format and writing style.</p> <p>Used terms specific to the Alberta Reliability Framework.</p>

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
	<p>1.2.2 MW and MVAR capability. 1.2.3 MW and MVAR net output. 1.2.4 Status of automatic voltage control facilities. 1.3. Operating reserve. 1.3.1 MW reserve available within ten minutes. 1.4. Balancing Authority demand. 1.4.1 Instantaneous. 1.5. Interchange. 1.5.1 Instantaneous actual interchange with each Balancing Authority. 1.5.2 Current Interchange Schedules with each Balancing Authority by individual Interchange Transaction, including Interchange identifiers, and reserve responsibilities. 1.5.3 Interchange Schedules for the next 24 hours. 1.6. Area Control Error and frequency. 1.6.1 Instantaneous area control error. 1.6.2 Clock hour area control error. 1.6.3 System frequency at one or more locations in the Balancing Authority.</p>	<p>1.2.1 Status. 1.2.2 MW and MVAR capability. 1.2.3 MW and MVAR net output. 1.2.4 Status of automatic voltage control facilities. 1.3. Operating reserves. 1.3.1 MW reserve available within ten minutes. 1.4. balancing authority demand. 1.4.1 Instantaneous. 1.5. Interchange. 1.5.1 Instantaneous actual interchange with each balancing authority. 1.5.2 Current interchange schedules with each balancing authority by individual interchange transaction, including interchange identifiers, and reserve responsibilities. 1.5.3 Interchange schedules for the next 24 hours.</p>	

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
	<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>1.6. Area control error and 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. <u>The following information must be updated as soon as the information becomes available.</u></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>	



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
		<p>2.6. New or degraded <u>remedial action schemes</u>.</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>	
Guidelines	None	None	