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AESO RELIABILITY PLAN

Contents

1	Introduction	2
A.	Responsibilities – Authorization	3
B.	Responsibilities – Delegation of Tasks	4
D.	Staffing.....	6
E.	Reliability Analysis for Next-Day and Current-Day Operations	7
F.	Next-Day Operations	9
G.	Current-Day Operations.....	10
H.	Emergency Operations	14
I.	System Restoration.....	15
J.	Adjacent RC Agreements and Data Sharing.....	16
2	Review and Approval.....	18
2.1	Periodic Review	18
2.2	Acknowledgement and Approval	18
3	Revision History.....	18

1 Introduction

The Alberta Electric System Operator (AESO) is the corporate entity accountable for the responsibilities and duties of the Independent System Operator (ISO)¹ under the Alberta Electric Utilities Act (EUA). The AESO's reliability area is defined as the physical footprint of the Province of Alberta. Alberta is synchronously interconnected to the Province of British Columbia² and the State of Montana, and asynchronously interconnected to the Province of Saskatchewan.

Under the legislative framework provided by the EUA the ISO has the duty "to direct the safe, reliable and economic operation of the interconnected electric system" for the Province of Alberta. The Alberta Reliability Standards (ARS) and ISO Rules provide the authoritative guidance for the AESO's reliability function. The reliability functions performed by the AESO include review and approval of planned transmission facility outages; review and assessment of supply adequacy; monitoring of real time loading information and calculating post-contingent loadings on transmission facilities; directing loading relief procedures including re-dispatching of generation, and directing curtailment of transactions and/or load. Additionally, the ISO is accountable for maintaining the supply/demand balance and directing of operating reserves (ancillary services) for the Province of Alberta.

This reliability plan describes the reliability functions performed by the AESO in the operation of the Bulk Electric System (BES). While this plan focuses on system operations roles and activities, the AESO, as part of its' legislated role, carries out a number of other functions that ensure the continued reliable operation of the Alberta Interconnected Electric System (AIES). Some of these functions include transmission system planning, establishing interconnection standards, monitoring for compliance to the ISO Rules and ARSs', procurement of ancillary services, and establishing energy market rules.

¹ In this document, the acronyms AESO and ISO are interchangeable

² The AESO reliability area is the province of Alberta.

A. *Responsibilities – Authorization*

1. Independence - The AESO is the Independent System Operator (ISO) for the Province of Alberta as stipulated in the Alberta Electric Utilities Act (EUA). It is a non-profit entity with no ownership of transmission or generation facilities. The AESO does and will act first and foremost in the best interest of its reliability area and the Western Interconnection before that of any other entity..
2. Authority to Act - The ISO's primary duties under the EUA are to “provide for the safe, reliable and economic operation of the interconnected electric system and to promote a fair, efficient and openly competitive market for electricity”.
3. Reliable Operations - The ISO models all transmission elements in Alberta operated at voltages greater than 25 kV in its offline model for the purposes of determining potential SOLs and IROLs within Alberta. For its Energy Management System (EMS) model, the ISO models all bulk electric system (BES) facilities. Further, using results from past studies, experience and engineering judgment any sub-transmission systems of lower than 100 kV that are critical (can possibly adversely impact reliability of the BES), are modeled in EMS. All generation facilities connected at voltages at or above 69kV /72kV are modeled in EMS. In addition, where generation facilities are connected at voltages lower than 69 kV/72 kV, such as 25kV, including the distribution system, the ISO models those facilities that are 5 MW or larger in its EMS to ensure visibility. Via its EMS, the AESO has a wide area view of Alberta and neighbouring areas that have an impact on the Alberta Interconnected Electric System (AIES). The AESO System Controllers (SCs) have the authority to prevent or mitigate emergency operating situations in both next-day analysis and during real-time conditions. The AESO SC has clear decision-making authority, including curtailing of load, to act and to direct actions to be taken within its reliability area to preserve the integrity and reliability of the AIES.
4. AESO Reliability Directives - Directives issued by the AESO will be in accordance with ISO Rules 301.2 – ISO Directives and 305.4 System Security as documented on the AESO website.

B. Responsibilities – Delegation of Tasks

1. The AESO has not delegated any reliability coordination function tasks.

C. System Coordination Centre

AESO performs the reliability function from the System Coordination Centre located in Calgary, Alberta, and has the necessary voice and data communication links to appropriate entities for the AESO SCs to perform their responsibilities.

1. Adequate Communication Links - AESO provides adequate and reliable telecommunication facilities to ensure the exchange of interconnection and operating information necessary to maintain reliability. Where applicable, these facilities are redundant and diversely routed.
2. Multi-directional Capabilities - The AESO SC has multi-directional communications capabilities within Alberta, and with neighbouring Reliability Coordinators (RC), BAs and TOPs, for both voice and data exchange to meet reliability needs of the Interconnection.
3. Real-time Monitoring - The AESO SC has detailed real-time monitoring capability of the AIES.
 - 3.1 The AESO SC monitors Bulk Power System elements (generators, transmission lines, buses, transformers, breakers, etc.) that could result in SOL or IROL violations within Alberta. The AESO SC monitors both real and reactive power system flows, and operating reserves, and the status of the Bulk Power System elements that are, or could be, critical to SOLs and IROLs and system restoration requirements within Alberta.

4. Back Up Coordination Centre (BUCC)

The AESO has a fully functional and redundant BUCC that can be operated from in the event that the SCC becomes unavailable. The BUCC is tested monthly and is operated in stand-alone mode three times a year to ensure its operational readiness.

5. Study and Analysis Tools

5.1 The AESO SC has adequate analysis tools, including state estimation, pre-and post-contingency analysis capabilities (thermal, voltage stability, and voltage magnitude), and wide-area overview displays. The AESO SC has detailed monitoring capability of the AIES and sufficient monitoring capability of the surrounding Reliability Areas to ensure potential reliability violations are identified.

To ensure SOL and IROL monitoring continues, the AESO has redundant independent backup facilities that will be utilized if the main monitoring system is unavailable.

The systems utilized by the AESO SC are:

- State Estimator and Contingency Analysis
- Real Time Voltage Stability Analysis
- Real-Time Multipoint Network Analysis
- Market Dispatch Tool
- Status and Analog Alarming
- Overview Displays of the AIES
- One line diagrams for critical facilities above 25 kV

5.2 The AESO SC controls its RC analysis tools, including approvals for planned maintenance. The AESO has procedures in place to mitigate the impacts of analysis tool outages

D. Staffing

1. Staff Adequately Trained and NERC Certified - AESO maintains trained NERC RC Certified System Controllers on duty 24 hours per day, seven days per week. The AESO staffs all operating positions that meet the following criteria with personnel that are NERC certified for the applicable functions:
 - Positions that have the primary responsibility, either directly or through communications with others, for the real-time operation of the interconnected Bulk Power System.

The AESO SC each complete training using realistic simulation of system emergencies, in addition to other training required to maintain NERC System Operator certification at the Reliability Operator (RC) level.

2. Comprehensive Understanding - The AESO operating personnel have a comprehensive understanding of the Market participants, TFOs, GFOs and DFOs within Alberta, including the operating staff, operating practices and procedures, restoration priorities and objectives, outage plans, equipment capabilities, operational restrictions, transmission system characteristics and behaviour.

AESO's System Controller Training Program includes learning activities during which Real-Time Operating personnel are trained to perform system controller tasks, and then verified as competent to perform those tasks both at the entry level and for continuous education.

3. Code of Conduct – All AESO employees must sign the AESO Code of Conduct, annually. The Code of Conduct provides clear requirements regarding sharing of confidential information. AESO SCs do not pass market information or data to any market participant that is not made available as soon as practicable to all such entities.

E. Reliability Analysis for Next-Day and Current-Day Operations

This section documents how the AESO conducts current-day and next-day reliability analysis for Alberta.

1. Determination of Interconnection Reliability Operating Limits (IROLs)

The AESO has a System Operating Limits Methodology for the operation horizon which includes establishing and communicating IROLs. The ISO first assesses IROLs in the planning horizon and these are provided to the operations horizon teams. Presently, the AESO has no IROLs identified in the planning horizon. The AESO will continue to determine IROLs from seasonal operations planning studies and from on-going operational studies which include ad-hoc studies in the weeks or months ahead of real-time, as well as specifically scheduled week-ahead and day-ahead operational studies. These assessments include steady-state power flow, voltage stability and dynamic stability studies. Further, in real-time AESO monitors for potential IROLs with automated contingency analysis tools conducting steady-state and voltage stability assessments.

Established IROLs are communicated to the appropriate entities as required. Changes to existing IROLs and newly established IROLs are communicated as required by FAC-014-AB.

2. Operation to prevent the likelihood of a SOL or IROL violation in another area of the

Interconnection and operation when there is a difference in limits - The Alberta system has controlled separation schemes on all the interties to other WECC entities. The purpose of the schemes is to protect the Alberta and neighbouring BAs for next contingency operation. Where there is a difference in derived limits with neighbouring entities, the AESO SC utilizes the most conservative limit until the difference is resolved.

3. Operation under known and studied conditions and re-posturing without delay and no longer than

30 minutes - The AESO SC ensures that Alberta market participants always operate under known and studied conditions and that they return their systems to a secure operating state following contingency events within established timelines, regardless of the number of contingency events that occur or the status of their monitoring, operating and analysis tools. The AESO SC will work to reconfigure the AIES system to within all limits following contingencies within 30 minutes.

On a daily basis, the AESO SC conducts next-day security analysis utilizing planned outages, forecasted loads, expected generation patterns, and expected net interchange. The analyses include contingency analysis, voltage stability analysis on key interfaces and a review of reactive reserves for defined areas when appropriate. These analyses model expected peak conditions for the day and are conducted utilizing next contingency analysis.

The AESO SC performs Current Day Security Analysis studies in the operating day for planned outages utilizing expected system conditions. The voltage stability analyses are also performed continuously and as required as system conditions warrant.

Mitigation plans are formed as needed for potential violations determined in the current and next day security analysis.

RELIABILITY PLAN

4. Communicating SOLs and IROLs

The AESO has a process for communicating SOLs and IROLs as required under FAC-014-AB1-2 *Establish and Communicate System Operating Limits*.

5. AESO process for issuing reliability directives - The AESO has implemented a communication protocol for issuing reliability directives in ISO Rule 301.2 – ISO Directives. The AESO SC issues reliability directives in a clear, concise and definitive manner. The AESO SC ensures that the person receiving the reliability directive repeats the information back correctly, and acknowledges the response as correct or repeats the original statement again to resolve any misunderstandings.

F. Next-Day Operations

This section documents how the AESO conducts next-day reliability analysis for Alberta.

1. Reliability Analysis and System Studies - The AESO conducts next-day operational planning analyses for Alberta to ensure that the Alberta interconnected electric system can be operated reliably in normal and post-contingency conditions. On a daily basis, the AESO conducts next-day operational planning analyses utilizing known outages, forecasted loads, various generation dispatch levels, and expected net interchange levels. All facilities assessed as critical that are greater than 25 kV in Alberta are monitored in the base case and all contingency cases. Base case flows on all monitored facilities are compared against normal facility ratings. Post-contingency flows for all monitored facilities are compared against their emergency ratings for all contingencies. Voltage stability analyses are conducted on key critical interfaces. Reactive reserves for specific areas are monitored to ensure they meet or exceed required levels.

Mitigation plans are formed as needed for potential violations determined in the next day operational planning analysis. Mitigation actions can include cancelling or rescheduling planned transmission outages, specific dispatching of generation or pre-configuring static reactive elements.

2. Information Sharing - Certain information required for system studies, such as critical facility status and generation availability are provided by Alberta market participants or neighbouring Balancing Authorities/Transmission Operators and Reliability Coordinators. Other information, such as load forecasts, operating reserves allocations and intertie schedules are obtained from internal AESO sources. Study results are shared with internal or external entities, when conditions warrant or upon request.

G. Current-Day Operations

This section documents how the AESO conducts current-day reliability analysis for Alberta.

1. The AESO SC uses the following processes to determine any potential SOL and IROL violations within Alberta:

The bulk electric system, as defined by the ISO, includes all facilities operated at voltages of 100 kV or higher. Under Alberta law (Alberta Electric Utilities Act), the ISO has operational accountability for the Alberta transmission system which includes all facilities operated at voltages greater than 25 kV. For this reason, the AESO models all transmission elements in Alberta operated at voltages greater than 25 kV in its offline model and all transmission elements in Alberta assessed as critical that are greater than 25 kV its online (EMS) model for the purposes of determining potential SOLs and IROLs. In addition, where generation facilities are connected to the distribution system at voltages of 25 kV or lower, the AESO represents those facilities that are 5 MW or larger in its EMS to ensure visibility and models those generation facilities that it considers to be potentially significant (such as facilities associated with large industrial sites that may impact the transmission system) in its offline models when determining potential SOLs and IROLs.

For adjacent reliability coordinator areas, the AESO has undertaken a comprehensive steady-state model validation by comparing full WECC bulk electric system model against reduced WECC operation models for use in the AESO's EMS to determine the limitations of the reduced models and identify specific facilities in external WECC areas that must be modelled and monitored in real time by AESO to enable the determination of potential SOLs and IROLs within Alberta. The study identified specific elements operated at voltages of 500 kV and lower that must be modelled to ensure accurate contingency and P-V analyses. The AESO updates its EMS model on an ongoing basis to capture changes in adjacent reliability coordinator areas.

The AESO SC utilizes a state estimator, real-time contingency analysis, and real-time voltage stability analysis as the primary tools to monitor facilities. The state estimator model includes all facilities assessed as critical greater than 25 kV in Alberta. The model also has extensive representation of neighbouring facilities in order to provide an effective wide-area view. The AESO State Estimator Model currently includes over 2,400 buses and over 23,000 ICCP points. This model is updated every two weeks and may be updated on demand when deemed necessary.

Real Time Contingency Analysis (RTCA) is performed on over 800 contingencies, defined by AESO engineering staff, utilizing the state estimator model every minute. Contingencies include all AIES equipment assessed as critical greater than 25 kV and neighbouring contingencies that would impact AIES facilities.

Real Time Voltage Stability Analysis (RTVSA) is performed on over 800 contingencies and 15 transfers scenarios defined by AESO engineering staff. RTVSA utilizes the state estimator model every minute and transfer scenario every ten minutes. Contingencies include all AIES equipment assessed as critical greater than 25 kV and neighbouring contingencies that would impact AIES voltage stability.

RELIABILITY PLAN

In addition to the above applications, AESO utilizes a transmission overview display called e-terra Vision to maintain a wide area view for real-time and N-1 conditions. Transmission facilities assessed as critical greater than 25 kV are depicted on the overview. RTCA results as well as flows (MW and MVAR) are also displayed. The Generation display monitors dispatch and actual generation. The Reliability Display monitors important substation voltages above 138kV, real-time line overloads and other area specific alarming. Bus level one-line diagrams are utilized for station level information.

2. The AESO monitors all facilities assessed as critical within Alberta operated at voltages greater than 25 kV as well as identified facilities in the WECC footprint. This includes all facilities whose failure, degradation or disconnection could result in an SOL or IROL violation within Alberta as well as all facilities that may be required to assist in the restoration of the Alberta transmission system. The AESO SC maintains awareness of the status of all current critical facilities whose failure, degradation or disconnection could result in an SOL or IROL violation within Alberta via State Estimator, RTCA, RTVSA, SCADA alarming, and transmission displays. The AESO SC is aware of the status of any facilities that may be required to assist Alberta Interconnected Electric System (AIES) restoration objectives via these same displays and tools.
3. The AESO SC is continuously aware of conditions within Alberta and includes this information in its reliability assessments via automatic updates to the state estimator, transmission displays. The AESO SC monitors the following parameters:
 - 3.1 Current status of Bulk Power System elements (transmission or generation including critical auxiliaries such as Automatic Voltage Regulators and Special Protection Systems and system loading are monitored by state estimator, SCADA Alarming and transmission displays. Generation operators are required to report to the AESO when Automatic Voltage Regulators and Power System Stabilizers are not in-service. Transmission Facility Owners (TFOs) are required to report to the AESO when Special Protection Systems change status or the corresponding teleprotection fails.
 - 3.2 Current pre-contingency element conditions (voltage, thermal, or stability) are monitored by state estimator, SCADA Alarming, and transmission displays including increased awareness of elements loaded above 75% of their thermal rating.
 - 3.3 Current post-contingency element conditions (voltage level, thermal, or voltage stability) are monitored by RTCA, RTVSA, and transmission displays.
 - 3.4 System real power reserves are monitored versus required per Balancing Area in the Market Monitoring Tool. Reactive reserves versus required are monitored via monitoring adequacy of calculated post-contingent steady state voltages versus voltage limits, voltage stability interfaces against limits, and reactive reserves versus required for defined zones.
 - 3.5 Capacity and energy adequacy conditions - via monitoring operating reserves requirements and regional reporting.
 - 3.6 Current ACE for Alberta is displayed numerically and in a trend graph on the video wall display. When ACE exceeds +/- 100MWs, graph changes colors to alert operator of magnitude of ACE.

RELIABILITY PLAN

- 3.7 Planned transmission and generation outages - via the AESO's CROW scheduling system.
- 3.8 Contingency Events - via the state estimator, RTCA, SCADA Alarming, RTVSA, and transmission displays.
4. The AESO SC monitors Bulk Power System parameters that may have significant impacts to the AIES and neighbouring reliability areas:
 - 4.1 The AESO SC maintains awareness of all Interchange Transactions that wheel-through, source, or sink in Alberta via E-tags and OATI displays.
 - 4.2 The AESO SC evaluates and assesses any additional Interchange Transactions that may exceed IROL or SOLs by comparing current system conditions and limits to RTCA results. As flows approach their IROL or SOLs, the AESO SC evaluates the incremental loading next-hour transactions would have on the SOLs or IROLs and determines if action needs to be taken to prevent an SOL or IROL violation. The AESO SC has the authority to direct all actions necessary and may utilize all resources to address a potential or actual IROL violation up to and including load shedding.
 - 4.3 Operating Reserves for the Alberta system are acquired via a day-ahead market mechanism. The AESO SC monitors dispatched Operating Reserves versus a real time calculation of the required amount to ensure the volumes of Operating Reserves are dispatched and available as required to meet NERC Control Performance Standards. The AESO SC is alerted if actual dispatched reserves fall below the required volumes. If necessary, the AESO SC will dispatch or direct additional reserves to fulfill requirements.
 - 4.4 The AESO SC identifies the cause of potential or actual SOL or IROL violations via analysis of state estimator results, RTCA results, SCADA Alarming of outages, transmission displays of changes, and Interchange Transaction impacts. The AESO SC will initiate control actions including transmission switching, generation directives, and/or emergency procedures to relieve the potential or actual IROL violation without delay, and no longer than 30 minutes. The AESO SC is authorized to direct utilization of all resources, including load shedding, to address a potential or actual IROL violation.
 - 4.5 The AESO will participate in all time error corrections as communicated by the time error monitor (Peak Reliability) when connected to the Western Interconnection.
 - 4.6 The AESO SC will participate, at least weekly, in conference calls with Peak Reliability to discuss generation supply adequacy.
 - 4.7 The AESO SC monitors system frequency via a trend graph as well as a digital display. The AESO SC monitors the ACE for the AIES.
 - 4.8 The AESO SC coordinates with neighbouring RCs, BAs, GFOs, and TFOs, as needed, on the development and implementation of action plans and operating guides to mitigate potential or actual SOL, IROL. The AESO SC coordinates pending generation and transmission maintenance outages with other RCs, Generation Operators, and TFOs affecting the ISO's interconnections as needed.

RELIABILITY PLAN

- 4.9 The TFOs within Alberta must inform AESO of all changes in status of Remedial Action Schemes (RAS) or Special Protection Systems (SPS) including any degradation or potential failure to operate as expected by the TFO. AESO factors these RAS or SPS changes into its reliability analyses.
5. The AESO SC confirms reliability assessment results via analyzing results of state estimator/RTCA, and discussions with local TFOs and neighbouring RCs. The AESO SC identifies options to mitigate potential or actual SOL or IROL violations via examining existing operating guides, system knowledge, and power flow analysis to identify and implement only those actions as necessary as to always act in the best interests of the interconnection.

H. Emergency Operations

1. The AESO SC follows System Controller Procedures and ISO rules to return the transmission system to within the SOLs or any applicable IROLs within required mitigation times.
2. The AESO SC may re-configure the transmission system, adjust generation, adjust voltage, manage Interchange transactions or shed firm load as deemed necessary to return the system to a reliable state.

1. System Restoration

1. AESO Restoration Plan - The AESO has developed the Alberta Interconnected Electric System (AIES) Power System Restoration Plan (PSRP). The PSRP is updated at least annually to reflect the ongoing changes to the AIES. The plan documents the roles and responsibilities, restoration guidelines, island strategies and system restoration process.

Power System Restoration Plan drills – The AESO conducts Power System Restoration Drills at least annually via a desktop simulation of an Alberta-wide blackout utilizing the AESO's Dispatch Training Simulator. Phone based communication between the participating TFOs, GFOs and the AESO is utilized to better simulate an actual event.

2. Knowledge of AESO Transmission Facility Owner Restoration Plans - AESO is aware of each major transmission facility owner Restoration Plan and has a written copy of each plan. During system restoration, AESO directs the restoration activities and coordinates efforts between participants.
3. Dissemination of Information - AESO serves as the primary contact for disseminating information regarding restoration to neighbouring Balancing Authorities, Reliability Coordinators and Alberta market participants not directly involved in restoration.
4. The AESO approves, communicates and coordinates the re-synchronizing of major system islands or synchronizing points so as not to cause a burden on member or adjacent Balancing Authorities and Reliability Areas.

J. Adjacent RC Agreements and Data Sharing

1. Coordination Agreements:

The Alberta Interconnected Electric System (AIES) is synchronously connected to the Western Interconnection through interties with British Columbia and Montana.

- The AESO and Peak Reliability have signed a Reliability Coordination Agreement
 - The AESO and Peak Reliability, Reliability Coordination Agreement salient points:
 - Peak Reliability performs the RC function for its Reliability Area, and the AESO performs RC-related activities for the Reliability Area of the province of Alberta,
 - The agreement supports the reliability of each Reliability Area by providing the framework for mutually beneficial coordination.
 - Supporting procedures and processes are supplemental to this agreement and developed under the authority of the Operating Committee established by the agreement.

The AESO is interconnected to the Eastern Interconnection through one asynchronous interconnection with SaskPower.

- The AESO and SaskPower have signed a Reliability Coordination Agreement.
 - The AESO and SaskPower Reliability Coordination Agreement salient points:
 - SaskPower performs the RC function for its Reliability Area, and the AESO performs RC-related activities for the Reliability Area of the province of Alberta.
 - This agreement supports the reliability of each Reliability Area by providing the framework for mutually beneficial coordination.
 - Supporting procedures and processes are supplemental to this agreement and developed under the authority of the Operating Committee established by the agreement.

2. Other Agreements:

- Northwest Power Pool Agreement
 - Signatories coordinate among the members to collectively support reliable operation of the Northwest Interconnected System.
 - Participating Balancing Authorities within the Northwest Power Pool through agreement have implemented a Reserve Sharing Program for contingency reserve. By sharing contingency reserve, signatories are entitled to use not only their own "internal" reserve resources, but to call on other participants for assistance if internal reserve does not fully cover a contingency or disturbance.
- Western Frequency Response Reserve Sharing Group
 - Signatories that have entered into this agreement, coordinate to facilitate collective compliance to R1 of BAL-003.
- AESO and SaskPower have an Interconnection agreement
 - This agreement provides the means to support the integrated generation and transmission systems in Saskatchewan and Alberta.

RELIABILITY PLAN

- Both agree to remain interconnected at the Interconnection point(s) except as provided for in the agreement.
- An Operating Committee is established to ensure coordination of the operations of the Alberta and Saskatchewan systems.

- AESO and BC Hydro have an Interconnection agreement
 - This agreement provides the means to support the integrated generation and transmission systems in British Columbia and Alberta.
 - Both agree to remain interconnected at the Interconnection point(s) except as provided for in the agreement.
 - An Operating Committee is established to ensure coordination of the operations of the Alberta and the British Columbia systems.

- Montana Alberta Tie Line Agreement
 - Titled: Coordinated Operating Agreement among Montana Alberta Tie Ltd. And MATL LLP And AESO And NorthWestern Corporation
 - Provides for the coordination of operations of the MATL System, NorthWestern System and Alberta System to ensure the safe and reliable operation of the electric systems which are, respectively, their responsibilities.
 - Establishes operating authorities and protocols required for decisions relating to the physical operation of the Interconnections.

3. Data Sharing

ISO determines the data requirements to support its reliability coordination tasks and requests such data from members and adjacent RCs. The ISO provides for data exchange with members and adjacent RCs, TOPs and BAs via shared, private networks. AESO Reliability Area members provide data to AESO via ICCP, DNP3, and C37.118. AESO provides data to entities outside AESO via shared, private networks using ICCP and C37.118.

2 Review and Approval

2.1 Periodic Review

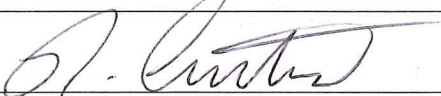

- Annually, Operations Services will coordinate the review of the Reliability Plan.

2.2 Acknowledgement and Approval

Acknowledgement means that the party accepts responsibility for following the plan and notifying Operations Services staff of any changes to the plan.

Content Review	Acknowledged	Name	Date
Real-Time Manager	<input checked="" type="checkbox"/>	Darren Wilkie	Jan 16, 2019
Manager, Operations Coordination	<input checked="" type="checkbox"/>	Eric Viray	Jan 16, 2019
Operations Services Manager or designate	<input checked="" type="checkbox"/>	Charlotte Feildel	Jan 24, 2019

Approval means that the party is Accountable for implementation of the plan for his/her respective business unit.

Approved by	Signature	Date
Neil Curtis, Director, Grid and Market Operations		Feb. 12, 2019
Ata Rehman, Director, Ops Planning & Engineering		Mar 5, 2019

3 Revision History

Version (Revision)	Effective Date	Description	Author
01 (00)	01-JAN-2014	Issued for implementation – original AESO Reliability Plan	Darren Wilkie
02 (00)	09-MAR-2015	Annual review and updated format	Cristina Papuc
03(00)	24-AUG-2015	Section G updated with details on monitored facilities	Cristina Papuc
04 (00)	31-JAN-2017	Annual review Admin changes	Nicole Nickel
05 (00)	31-JAN-2018	Annual review Section A updated regarding modelling in EMS Section G updated for clarity	Nicole Nickel
06 (00)	15-Feb-2019	Annual review Section J updated with an Agreement addition	Nicole Nickel