

ARS Program Prioritization and Development Phase Guide

Date: June 11, 2024

Prepared by: AESO

Version: 2

Classification: Public

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Introduction

The purpose of this document is to provide Stakeholders with an overview of the AESO's Alberta Reliability Standard (ARS) Program prioritization and development phase process steps, as well as the AESO's risk-based approach and the principles that are applied to these phases of the AESO program lifecycle. This document is an outcome of the AESO's Enhanced ARS Program Initiative, which concluded in 2023. For further information on this initiative please see the [AESO website](#).

ARS Prioritization and Development Phase Process Steps

The ARS Prioritization and Development Phase Process Steps are shown in Figure 1 below.

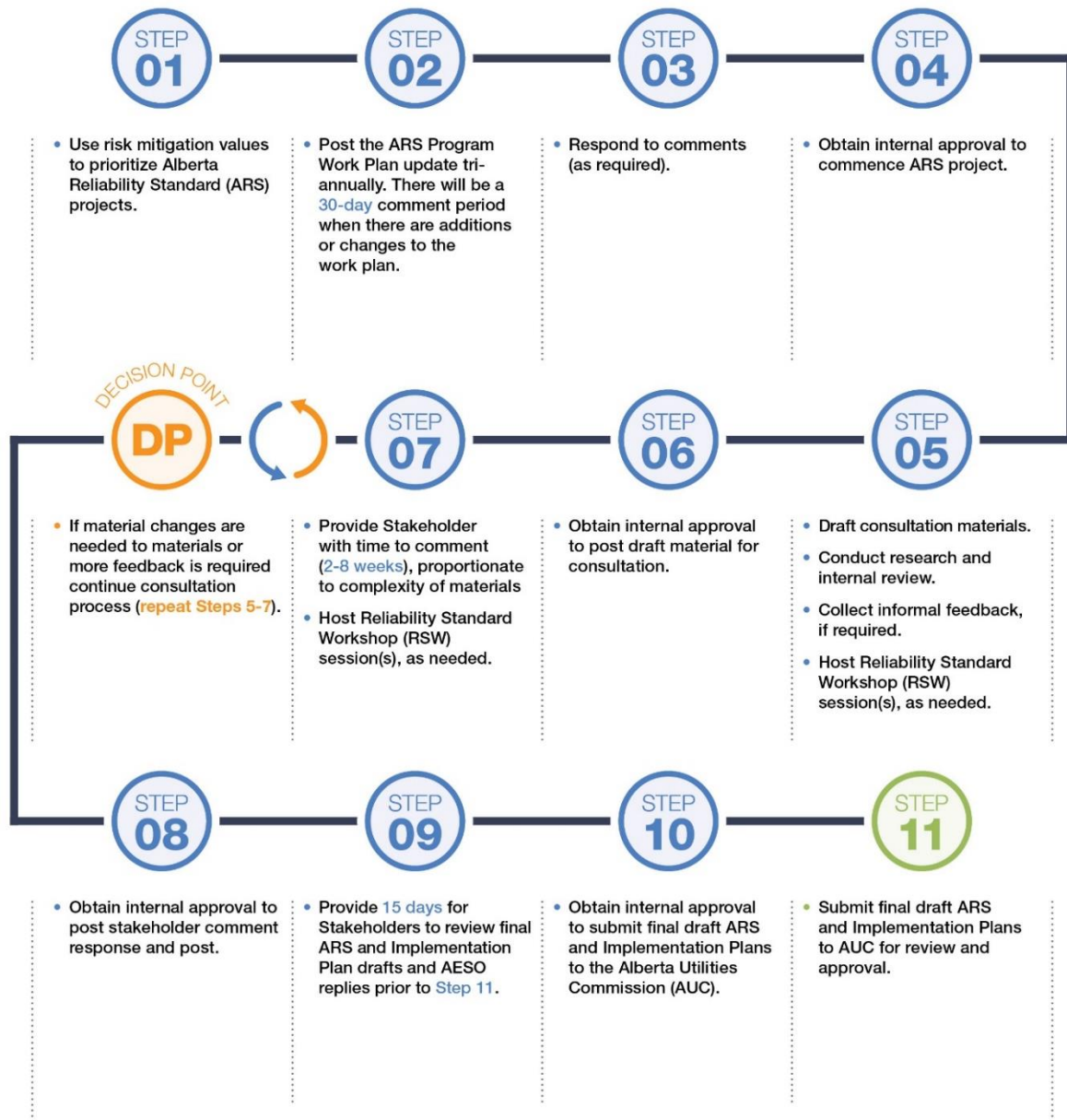


Figure 1: ARS Prioritization and Development Phase Process Steps

Risk-Based Approach

The AESO applies a risk-based approach to decisions across the ARS Program Lifecycle, including its decisions related to NERC and WECC reliability standard adoption and ARS Project¹ prioritization. This risk-based approach incorporates both NERC's risk assessment framework and factors that impact the safe and reliable operation of the Alberta interconnected electric system (AIES). The NERC risk assessment framework includes the creation of bi-annual risk prioritization reports, which have an impact on the new and amended NERC reliability standards prioritization. NERC's risk assessment framework also includes the creation of Violation Risk Factors (VRF)² for new and amended reliability standard requirements. NERC and WECC VRFs are key inputs to the Alberta risk-based assessment of ARS Project prioritization.

Alberta Risk Assessment of NERC and WECC Reliability Standards

Once a new or amended NERC or WECC reliability standard requirement has been approved by FERC, the AESO determines whether it is appropriate to adopt the new or amended requirement in a new or existing ARS and, if so, an Alberta Risk Rating (ARR) is created for each new or amended requirement.

Decision to Adopt

When deciding whether to adopt a reliability standard requirement into a new or amended ARS, the AESO considers whether the reliability risk mitigated by a NERC or WECC reliability standard requirement is applicable in Alberta. If so, whether the reliability risk has been sufficiently mitigated by an ARS or another authoritative document, such as the *Electric Utilities Act*, the *Transmission Regulation*, AUC rules, or ISO rules. When the AESO decides not to adopt a NERC or WECC reliability standard requirement, the rationale for the decision will be provided to Stakeholders in Steps 5 to 7 of the ARS Prioritization and Development Phase Process Steps, shown in Figure 1 above.

Alberta Risk Ratings

Once the adoption decision is made, the AESO creates an ARR for each new or amended NERC or WECC reliability standard requirement. ARRs are based on NERC VRFs. ARRs are created in Step 1 and refined in Step 5. The ARRs and any rationale for deviations from NERC or WECC VRFs will be provided to Stakeholders in Steps 5 to 7 of the ARS Prioritization and Development Phase Process Steps, shown in Figure 1 above.

Should the AESO decide that a new AESO-only ARS requirement is needed, the AESO will develop ARRs for these ARS requirements in alignment with the definitions below with consideration given to the guidelines FERC uses to determine whether to approve NERC VRFs, as outlined in NERC's *Violation Risk Factor* document.

ARRs for all current ARS can be found on the AESO website.

Alberta Risk Rating Definitions

There are 3 ARRs: High, Medium, or Lower. The AESO's ARR definitions for high, medium, and lower align with NERC VRF definitions, as described below.

- **High** – A requirement that, if violated, could directly cause or contribute to the Alberta interconnected electric system (AIES) instability, separation, or a cascading sequence of failures, or could place the

¹ An ARS Project consists of 1 or more new and/or amended Alberta reliability standards that cover the same or similar topic. They generally align with NERC and WECC projects.

² Violation Risk Factors and the related FERC approval guidelines are described in NERC's *Violation Risk Factors* document, available at www.nerc.com.

AIES at an unacceptable risk of instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to AIES instability, separation, or a cascading sequence of failures, or could place the AIES at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

- **Medium** – A requirement that, if violated, could directly affect the electrical state or the capability of the AIES, or the ability to effectively monitor and control the AIES. However, violation of a medium risk requirement is unlikely to lead to AIES instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the AIES, or the ability to effectively monitor, control, or restore the AIES. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to AIES instability, separation, or cascading failures, nor to hinder restoration to a normal condition.
- **Lower** – A requirement that is administrative in nature and a requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the AIES, or the ability to effectively monitor and control the AIES; or, a requirement that is administrative in nature and a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the AIES, or the ability to effectively monitor, control, or restore the AIES. A planning requirement that is administrative in nature.

Differences between NERC VRF and AESO ARR

There are a few differences in the risk profile of the AIES and most NERC jurisdiction electricity systems, which results in some reliability standard requirements having an increased or decreased impact on risk mitigation. These differences are mainly due to the relatively loose connection the AIES has with the rest of the WECC. In these cases, the AESO may set a higher or lower ARR when compared to NERC VRF, in alignment with the ARR definitions provided above.

The AIES risk profile elements that may increase an ARR when compared to NERC VRFs include the following:

- There is a higher range of frequency deviation events in Alberta.
- Blackstart restoration relies mostly on internal Alberta assets, not interties.

The AIES risk profile elements that may decrease an ARR when compared to NERC VRFs include the following:

- The AESO has the ability to create an electrical island.
- There are limited cascading failures to and from the rest of WECC. As a result, there are currently, no interconnection reliability operating limits (IROL) on the AIES.

When the AESO decides to choose an ARR that does not align with the NERC VRF, the risk-based rationale will be provided to Stakeholders.

Standards Prioritization

The objective of the AESO risk-based prioritization process is to ensure ARS Projects are prioritized by the risk they mitigate.

To determine the risk mitigation associated with each ARS Project, once the ARRs for each new or amended standard are created in Step 1 of the ARS Prioritization and Development Phase Process Steps, shown in Figure 1 above, the AESO:

- Bundles new and amended reliability standards into ARS Projects, considering dependencies of reliability standard requirement updates.
 - Generally, ARS Projects align to NERC or WECC reliability standard projects.
- Determines the risk mitigation associated with each ARS Project.
 - For amended reliability standard requirements, the incremental risk mitigation of moving from the existing ARS requirement to the new version of the NERC or WECC reliability standard requirement is considered.
 - Material changes are assessed as having an incremental risk mitigation whereas editorial changes do not.

Principles

Once an ARS Project is prioritized, the AESO will follow guiding principles for scheduling prioritized ARS Projects, for the development phase of the ARS Projects, and for creating information documents. These principles also apply to Steps 2 through Step 10 of the ARS Prioritization and Development Phase Process Steps, shown in Figure 1 above. The AESO will make every effort to follow these high-level guiding principles for all ARS Projects and will notify stakeholders where this is not possible.

Scheduling Prioritized ARS Projects

The AESO's principles for scheduling prioritized ARS Projects apply to Step 2, Step 3, Step 7, and Step 8 of the ARS Prioritization and Development Phase Process Steps, shown in Figure 1 above. Once scheduled, the ARS Projects will appear on the ARS Program Work Plan.

Overarching Principles

The AESO will:

- Utilize ARS Projects to increase efficiency by batching related ARS updates.
- Prioritize ARS Projects based on risk-mitigation value as determined through the AESO's risk-based methodology.
- Include date ranges that account for the possibility of ARS Projects ending early or starting late to provide greater schedule certainty.

AESO Stakeholder Engagement Process

The AESO will:

- Assume approximately 1 year for each ARS Project
 - Smaller ARS Projects may use a shorter schedule, but a minimum of 6 months will be assumed for planning purposes.
 - ARS Projects may move quicker through the Stakeholder Engagement process.
- Advance no more than 2 ARS Projects at one time in the near term
 - If an ARS Project takes longer to complete, then it will impact the start of the next ARS Project on the ARS Program Work Plan.

AUC Decision Timeline Assumed for Planning Purposes

The AESO will:

- Plan for a 15-day to 3-month period.
 - Assumes no significant additional AUC process required.

AESO Implementation Phase and Effective/Retirement Dates

The AESO will:

- Propose implementation timelines, for ARS Projects that are based on approved NERC or WECC standards, that consider both NERC implementation plans and Alberta-specific factors with exact dates finalized following Stakeholder consultation.
- Wait until FERC approval prior to adding them to the Work Plan, for ARS Projects that are based on proposed NERC or WECC standards; and propose an effective/retirement date, in alignment with the FERC-approved timelines, that provide at least 3 years from the time of notice, when possible.
 - Proposed effective/retirement dates should be in alignment with the FERC-approved timelines while providing, in general, at least 3 years from the time of notice.
 - Exact dates will be finalized following stakeholder consultation.
 - When the AESO determines that the adoption of one or more ARS is needed to address an unacceptable and urgent risk to the BES, the AESO may propose a more expedited schedule. In these cases, the AESO will provide stakeholders with as much advance notice as possible.

ARS Development Phase Process Guiding Principles

Once an ARS Project is in the development stage, the AESO will follow its ARS Development Phase Process Guiding Principles. The ARS Development Phase Process Guiding Principles apply to Steps 5 to 8 of the ARS Prioritization and Development Phase Process Steps, shown in Figure 1 above.

Reliability Standard Consistency

- The AESO will align ARS to the content of corresponding NERC/WECC reliability standards and to the drafting style used in each reliability standard it plans to adopt, whenever possible.
- During the development of ARS, the AESO will identify the location of key NERC/WECC project documents that relate to corresponding NERC/WECC reliability standard projects and consider the application to ARS.

Reliability Standard Deviations

- The AESO will modify NERC/WECC reliability standards to align with the Alberta electricity framework when needed. Rationale for all deviations will be provided in stakeholder engagement material.
- The AESO will use AESO authoritative terms, as provided in AESO's *Consolidated Authoritative Document Glossary*³ in place of NERC authoritative terms⁴ throughout the ARS.

Stakeholder Review Material

- Draft ARS (with ARS/NERC blacklines), Implementation Plans, ARRs, AESO Information Documents, and Reliability Standard Audit Worksheets will be provided for review and feedback.

Stakeholder Material Review Time

- In general, 3 to 8 weeks will be given, proportionate to the volume and complexity of the standards being developed and material provided, with a minimum review period of 2 weeks.
- Stakeholder feedback on timelines will be considered.

Stakeholder Engagement Tools

- The AESO will develop a stakeholder engagement plan with timelines for each ARS Project, this may include written consultation, surveys, and Reliability Standards Workshops.

³ The AESO's *Consolidated Authoritative Document Glossary* is available on the AESO website.

⁴ NERC's authoritative terms can be found in NERC's *Glossary of Terms* document, which is available at: www.nerc.com.

Information Document Guiding Principles

The AESO established a set of principles specific to information documents (IDs) and external industry supporting material, which the AESO will follow when developing IDs in Step 5 of the ARS Prioritization and Development Phase Process Steps, shown in Figure 1 above.

- The AESO will leverage, where applicable, external industry supporting technical documents, including documents from NERC and other organizations.
- ARS Information Documents (IDs) will contain a list of all external supporting technical documents referenced with author and version information, where available.
- ARS ID content will align to the developed North American industry practices and interpretations, wherever possible.
- ARS IDs will indicate whether the AESO agrees that all external supporting technical documents referenced are applicable in Alberta.
- Where there are sections of the material that, in the AESO's view, are not applicable to Alberta, the AESO will indicate this in the ARS ID and provide its rationale.

Version	Description of Changes	Date
1	Initial Version	31-May-2024
2	Added information on AESO's process for creating ARRs for AESO-only requirements. Editorial errors fixed.	11-Jun-2024