

# Alberta Reliability Standards Stakeholder Presentation

November 17, 2009

Reliable **Power**

Reliable **Markets**

Reliable **People**



# Agenda



## Implementation of the Alberta Reliability Standards (ARS)

- Status update
- Specific issues

## Compliance Monitoring

- Compliance expectations
- Compliance Monitoring Program (CMP) implementation
- Self-Certification process
- Reliability Standard Audit Worksheet (RSAW)

# Alberta Reliability Standards Implementation

Jason Murray – Manager, Operations Services  
November 17, 2009 Stakeholder Meeting

Reliable **Power**

Reliable **Markets**

Reliable **People**

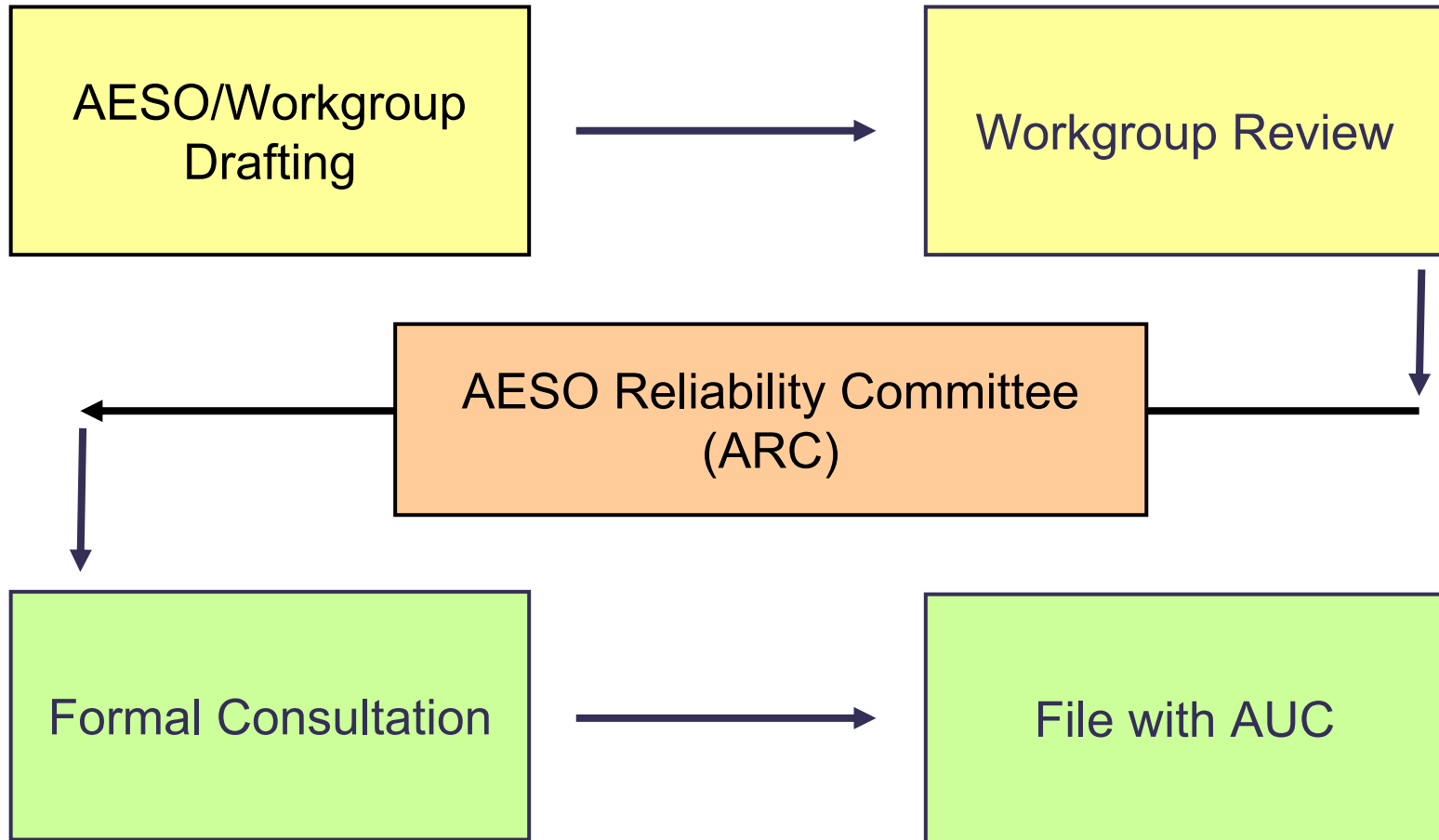


# Background



- 2007 Transmission Regulation required the AESO to adopt U.S. NERC/WECC reliability standards
- AESO established working groups (ARC) of affected stakeholders to create made-in-Alberta reliability standards
- The draft ARS are consulted on with stakeholders similar to ISO rules process
- ARS are filed with and approved by the AUC

# ARS Process



# ARS Adoption



- Following the AESO's review and consultation with stakeholders, the AESO may make one of the following recommendations to the AUC on the adoption of a U.S. Reliability Standard as an ARS:
  1. Recommend approval as an ARS which is consistent with the U.S. Reliability Standard, or
  2. Recommend approval as an ARS that contains an Alberta variance (a change from the U.S. standard that the AESO has determined is material) to the U.S. standard, or
  3. Recommend to not approve the U.S. standard as an ARS

# Status Update



- 58 ARS approved by end of 2009
  - 10 applicable to market participants
- ARS project to be completed by the end of 2010
- NERC/WECC monitoring ongoing for applicability to ARS

# Status Update



<u>Completion Date</u>	<u>Number of standards</u>	<u>Total</u>	<u>Market Part. Applicable</u>
Oct 2008	3 (completed)	3	1
Jan 2009	8 (completed)	11	2
Apr 2009	2 (completed)	13	3
Jul 2009	39 (completed)	52	5
Oct 2009	17 (Filing with AUC)	69	10 (est.)
Jan 2010	18 (Internal consultation)	87	25 (est.)
Apr 2010	15 (Internal drafting)	102	36 (est.)
Jul 2010	15 (future)	117	48 (est.)
Oct 2010	6 (future)	123	53 (est.)
Jan 2011 and beyond	? (ongoing maintenance)		

# ARS Coordination with TOAD



**ARS**

**ISO Rules**

**Tariff**

- TOAD addresses “overlaps” and ensures duplicity is avoided
- The AESO agrees, in principle, that a requirement should only exist in one type of AESO Authoritative Document (AD)
- No specific duty or responsibility be located in more than one such Authoritative Document
- The final TOAD structure will take time to implement and overlaps may exist in the interim

# Critical Infrastructure Protection (CIP) Standard Update



- Special set of standards that have a broader impact for organizations than the typical reliability standard
  - Technical compliance is already in place for most standards, but not CIP ones
  - CIP standards introduce NEW requirements that most are not already compliant to
  - Many deal with Information Technology – hard to change quickly
  - Difficult to make changes with complex and integrated systems
- NERC has recognized these complications with CIP standards
  - Allow phased in Implementation of changes
  - Allows exceptions where technically unfeasible to implement

# Critical Infrastructure Protection (CIP) Standard Update



- We see the same issues and will align with NERC
  - Security Working Group will include implementation targets for each standard
  - Technical feasibility exceptions will be identified in each standard
  - A Technical Feasibility Exception program aligning with the NERC model will be introduced
- Progress to date
  - CIP-001 is ready to be filed
  - Working on CIP-002 – which defines what assets are critical
  - CIP 003-009 will be reviewed in 2010

# Compliance Monitoring for Alberta Reliability Standards

Peter Wong – Director, Compliance  
November 17, 2009 Stakeholder Meeting

Reliable **Power**

Reliable **Markets**

Reliable **People**



# Agenda



1. Compliance for Alberta Reliability Standards
2. Compliance Monitoring Program
3. Self-Certification Process
4. Assessment Worksheets

# Introduction – Compliance for Alberta Reliability Standards



Compliance Monitoring is *checking and getting assurances that parties that impact the reliability of the transmission system follow established standards*

- Why is this important?
  - Because the standards themselves are important
  - Overall reliability depends on ALL parties meeting requirements, not just some
  - Identifies where corrections are needed
  
- How do you get assurances?
  - One model – oversight of activities, watch over the operations, check that work is done, etc. (eg. Meat packing industry – inspectors on site)
  - NERC Model – Documentation based
    - Provide documented proof of compliance

# What does compliance to a standard mean?



- Compliance from the 'Effective Date' of a standard
  - Working groups provided input to setting the effective date
  - AUC approves the effective date with the standard
- Compliance comes in 2 parts:
  1. **Technically compliant** - doing what the standard requires operationally and technically
  2. **Auditably compliant** - providing sufficient evidence to demonstrate you have complied technically
- You must be both **technically** and **auditably** compliant

# Being Technically Compliant – an example



- Example – PRC-005-AB-1 Requirement 3 – deals with relay testing
  - Requirement states ... *the TFO and GFO must implement the program and test protection devices ....*
    - *Note for context - a previous requirement states that a program must include test intervals, procedures, cover all protective relays*
  - Technically compliant – would mean that you
    - Have a program implemented – have in place processes, systems, resources assigned, plan and schedules, etc.
    - Test your physical relay devices in accordance with the program;
      - Test all relays in your program;
      - Using the procedures in the program;
      - Within the intervals stated in the program.

# Being Auditably Compliant – an example



- Example – PRC-005-AB-1 Requirement 3 – deals with relay testing
  - Requirement states ... *the TFO and GFO must implement the program and test protection devices ....*
  
  - Auditably compliant – means you
    - Have process diagrams, schedules, work assignments that show the program is active
    - Have records to show all relays have been tested
      - Listing of relays in the program, identify ones that have been tested, and those that have not been tested (eg. can be a summary sheet from a database)
      - Have records to show you have done tests (test sheets, work orders, or other records)
      - Records must relate to the requirement – show the relay, show the date, show tests were completed (checked)

# Getting Prepared for being Auditably Compliant



- From the 'Effective Date' of each standard
- Need to focus on documentation in most organizations
  - Don't put it off, start before the standard becomes effective
  - Don't expect it to magically appear or assume someone is doing it already - check
  - Put an internal compliance program in place
  - Make it part of the normal work process
  - Some software to help manage and organize documentation is available in the market
- AESO faces the same challenges
  - Putting in place an Internal Compliance Program to collect and organize evidence

# How is Compliance Checked?



- The Compliance Monitoring Program sets out the processes for checking
  - Registration – identifies what functional entity/s applies to each *market participant*
    - Every *standard* that applies to your functional entity/s will be checked in the compliance program; you may be exempt from some *standards* or requirements
- Checking for each standard
  - Periodically, you will report information <only if specified in the standard>
  - Each year, you will self-certify
  - Every 5 years, you will be audited
  - At any time, you may be subject to a spot check audit

# An example, FAC-003-AB-1 Vegetation Management



- What does an owner of a transmission facility have to do?
  - Reporting – every quarter, a TFO must report outages caused by vegetation
  - Certification – every year, an officer from the TFO must provide a written statement that they have followed all the requirements of this standard. Non-compliance must be identified. They do not have to provide evidence unless requested.
  - Audit – every 4-5 years, an audit will be conducted where you will be requested to provide evidence of compliance for the audit period (up to 5 years back)
  - Spot check – if there is a concern that needs to be addressed (eg. lots of outages reported due to vegetation) you may be requested to provide evidence you are complying with the standard

# Compliance Monitoring for Alberta Reliability Standards

## Program Implementation

Reliable **Power**

Reliable **Markets**

Reliable **People**



# Compliance Monitoring Program Targets and Timelines



- Registration and Reporting
  - In place now
- Self-Certification Process <almost ready>
  - Guidelines/Schedules will be posted soon <end of Nov 2009>
  - Will conduct an informational workshop – Dec 2009 /Jan 2010
  - Self-certification begins in the 2<sup>nd</sup> quarter of 2010
- Audits
  - Guidelines under development
  - Will have an informational workshop
  - Looking at mid-2010 to conduct first audit
- All components of the program are operational in 2010 on all standards that are effective

# Compliance Monitoring Program Implementation



- In the US,
  - All standards mandatory and effective June 18, 2007
  - All compliance activities introduced at same time
  - No opportunity to adjust processes or fix problems
  - Result – not so good
- Alberta approach – gradual transition
  - Gradual addition of new standards as they are approved, starting in 2008 and completing by end of 2010
  - Gradual introduction of the compliance monitoring program components, starting in 2009 and completing by end of 2010
  - Consultative with standards, effective dates, program
  - Incorporates educational components (workshops, info sessions)

# Standards subject to monitoring under the Compliance Monitoring Program



	January 1, 2010	April 1, 2010
<b>New Standards (Total)</b>	<b>6 (6)</b>	<b>8 (14)</b>
Transmission Facility Owners (TFO)	FAC-003, TOP-005 EOP-003, EOP-004 PRC-021	EOP-001, PRC-015 CIP-001, PRC-004 PRC-004-WECC, PRC-016
Generation Facility Owners (GFO)	EOP-004	PRC-015, CIP-001 PRC-004, PRC-004-WECC PRC-016
Generation Operators (GOP)		PRC-001, PRC-004-WECC
Wire Owners (WO)		PRC-015, CIP-001 PRC-016
Wire Service Providers (WSP)	EOP-003	
Pool Participants	TOP-005	
Demand Customers	EOP-003 , PRC-021	

# Compliance Monitoring for Alberta Reliability Standards

## Self-Certification

Reliable **Power**

Reliable **Markets**

Reliable **People**



# Self-Certification Highlights



**Self-Certification – a *written letter submitted by a market participant to AESO to certify the compliant status with applicable Alberta reliability standards.***

- An efficient method to get assurance of compliance without more audits
- Relies on internal review by *market participants*
- Some highlights of the process:
  - Based on 4 cycles annually
  - Accommodates changes in cycles
  - AESO will provide a notification reminder
  - 30 days of preparation time
  - Template Letter is provided
  - Requires an Officer sign off
  - May request follow up evidence to substantiate certification

# Self-Certification Rollout



- Release Guideline and Schedule by end of November 2009
  - Informational Workshop will be scheduled – Dec 2009 or Jan 2010
- The Self-Certification begins in 2<sup>nd</sup> Quarter 2010
  - Applies ONLY to standards in effect by April 1, 2010
- Preparation and suggestions
  - Advise the Officer responsible for certification that they will have to certify – don't surprise them
  - For those standards that apply to you – compile evidence that will help you convince your Officer you are compliant (starting from the effective date for the standard)
  - Look at putting together an Internal Compliance Program – regular checks and documentation of your compliance

# Compliance Monitoring for Alberta Reliability Standards

## Assessment Worksheets

Reliable **Power**

Reliable **Markets**

Reliable **People**



# Assessment Worksheets



- AESO will use assessment worksheets (or RSAWs)
  - An auditor worksheet, concept from NERC
  - Guides the auditor – questioning and methodology
  - To record evidence, references, and notes
  - Supports consistent auditing of the standard
  - Will be provided as evidence in referrals
- The worksheets are
  - Specific to each standard
  - Do NOT add new requirements
  - Are NOT authoritative documents
- Will be made available to market participants as they are developed

# Assessment Worksheet Example



## FAC-002-AB-0 Coordination of Plans for New Facilities

- Requirement 1: <applies to AESO>
  - **The *ISO* must retain the documentation of its evaluation of the potential *reliability* impact of the new *transmission facilities* and their connections on the *AIES* for three years after energization.**
- Measure:
  - **Documentation exists for the past three years and is made available when requested per R1. .**
- Assessment Approach:
  - Request list of all new facilities and their connections during the audit period? <list is available and complete>
  - Confirm that an evaluation document indicating potential reliability impact exists for each new transmission facility and their connections? <evaluation documents are available>
  - Is it complete? Acceptable evidence exists to support the conclusions in the evaluation <in addition to evaluation conclusion document – supporting documentation is available such as SLDs, base case, data models>
  - The documentation is available for the required 3 years? <should have a copy of it>

# Assessment Worksheet Development



- Developed by the standard owner and compliance
  - Working group comments and input brought forward
  - Considers content from NERC and WECC worksheets
- Get it out within 60 days of approval or effective date
- Worksheets do not get approved by AUC, they are the AESO's working documents
  - Changes made from time to time
  - Market participants will be notified of new postings through weekly update
- Looking at having information sessions to go over new worksheets if there is interest

# Alberta Reliability Standards Applicable to AESO



- AESO must comply with *reliability standards* that apply to AESO
- WECC to monitor AESO compliance as noted in WECC/AESO Operating Agreement
- Program must be similar to *market participants* program

# Summary



1. Register, if you have not done so
2. Watch for new standards and when they are effective
3. Prepare to be 'auditably' compliant
4. Get ready for Self-Certification coming in 2Q 2010
5. Look for assessment worksheets as they are posted
6. Call us for questions around compliance monitoring

# References:



Alberta *reliability standards* information links:

[www.aeso.ca/rulesprocedures/17004.html](http://www.aeso.ca/rulesprocedures/17004.html)

[Alberta Reliability Standards Project Plan \(October 2009\)](#)

[Current Alberta Reliability Standards](#)

[Proposed Alberta Reliability Standards](#)

[Non-applicable Standards](#)

[AESO Reliability Committee \(ARC\)](#)

[Reliability Standards Activity Reports](#)

Compliance Guidelines and Information:

<http://www.aeso.ca/loadsettlement/17189.html>

Registry: [http://www.aeso.ca/downloads/ARS\\_Registry.pdf](http://www.aeso.ca/downloads/ARS_Registry.pdf)

# Contacts for Reliability Standards



- Standards Development:
  - Jerry Mossing (Executive Sponsor) - (403-539-2496) [jerry.mossing@aeso.ca](mailto:jerry.mossing@aeso.ca)
  - Jason Murray - (403-705-5230) [jason.murray@aeso.ca](mailto:jason.murray@aeso.ca)
  - Ron Smith – (403-539-2595) [ron.smith@aeso.ca](mailto:ron.smith@aeso.ca)
- Standards Compliance:
  - Peter Wong - (403-539-2552) [peter.wong@aeso.ca](mailto:peter.wong@aeso.ca)
  - Daniela Cismaru – (403-539-2643) [daniela.cismaru@aeso.ca](mailto:daniela.cismaru@aeso.ca)

# Questions?



# Alberta Reliability Standards Background Information

November 17, 2009

Reliable **Power**

Reliable **Markets**

Reliable **People**



# References



- The following slides provide some background information on the history of the ARS implementation project and are for reference only...

# Prior to Mandatory Reliability Standards



- North American Electric Reliability Corporation (NERC) is made up of industry representatives. Model is based on voluntary compliance.
- Alberta entities including AESO operate to NERC/ (Western Electricity Coordinating Council (WECC) criteria as good utility practice
- Prior NERC/WECC control area audits and readiness evaluations of AESO, AltaLink and ATCO Electric

# The Move to Mandatory Reliability Standards – North America



- Energy Policy Act 2005, led to implementation of a consistent set of reliability standards in North America
- FERC certifies NERC as ERO in U.S.
- FERC has approved over 100 reliability standards to date
- Over 60 FERC approved standards are either currently under revision or are scheduled to be revised in the near future
- WECC has implemented a compliance enforcement program in U.S. in its area (the Western interconnection)

# The Move to Mandatory Reliability Standards - Alberta



- Alberta Department of Energy created policy and legislation to support reliability of the Alberta interconnected electric system
  - *Transmission Regulation* (AR 86 / 2007) provides direction for the AESO regarding reliability standards in Alberta including:
    - Consultation with affected entities
    - Application, adoption, publication and modification
    - Recognition of an ERO
    - Alberta autonomy
    - Compliance monitoring and reporting
- AESO ensures reliability of Alberta Interconnected Electric System, plans transmission facilities to meet the needs of load and generation, monitors compliance with Alberta standards and rules
- Market Surveillance Administrator performs the prosecution function of Alberta entities as may be required
- AUC regulates the electric industry, approves Alberta Reliability Standards and verifies the effective date of ISO rules

# The Move to Mandatory Reliability Standards - Alberta



- AESO formally adhered to a variety of reliability standards in the Reliability Management System (RMS) agreement with WECC
- Alberta Reliability Standards initiative will replace the RMS Agreement

# The Approach



## ISO Rule

Filed with the AUC

Market participant can object based on:

1. AESO did not comply with the AUC's rules
2. Technically deficient
3. Does not support FEOC
4. Not in the public interest

Defined process regarding filing and dealing with objections

## Alberta Reliability Standard

Forward the ARS to the AUC with recommendation to approve

Interested person can file a deficiency claim – must satisfy the AUC that:

1. Technically deficient
2. Not in the public interest

It seems that there is no existing process

# The Approach



The approach is that:

- AESO will adopt ARS as both Reliability Standards and ISO rules, i.e. we will comply with:
  - T-Reg 86/2007 s.19 on Reliability Standards, e.g. to consult with those market participants that are directly affected and forward the proposed reliability standards with the ISO's recommendation that the AUC approve or reject them
  - Electric Utilities Act s.20 on ISO rules, e.g. filing with the AUC, complying with AUC Rule 017

# The AESO Reliability Committee (ARC)



- To meet the requirements on stakeholder consultation, the AESO initiated the AESO Reliability Committee (ARC), with representatives from industry, in Dec 2007
- Several ARC Work Groups have been formed and are tasked with the review of assigned NERC and WECC standards
- The ARC Work Groups make recommendations to the ARC, which in turn provides advice to the AESO

# High Level Principles



- The AESO will undertake reasonable efforts to recommend the adoption of U.S. Reliability Standards as ARS considering:

# High Level Principles



- ✓ Consistent with applicable law in Alberta
- ✓ Consistent with the safe, reliable and economic operation of AIES
- ✓ Consistent with the FEOC operation of the electricity markets in Alberta
- ✓ Consistent with the structure of the industry in Alberta
- ✓ Would not result in an authority being transferred outside of Alberta
- ✓ In the public interest
- ✓ Not technically deficient in light of Alberta's industry
- ✓ Consistent with business practices in Alberta

# High Level description of Process



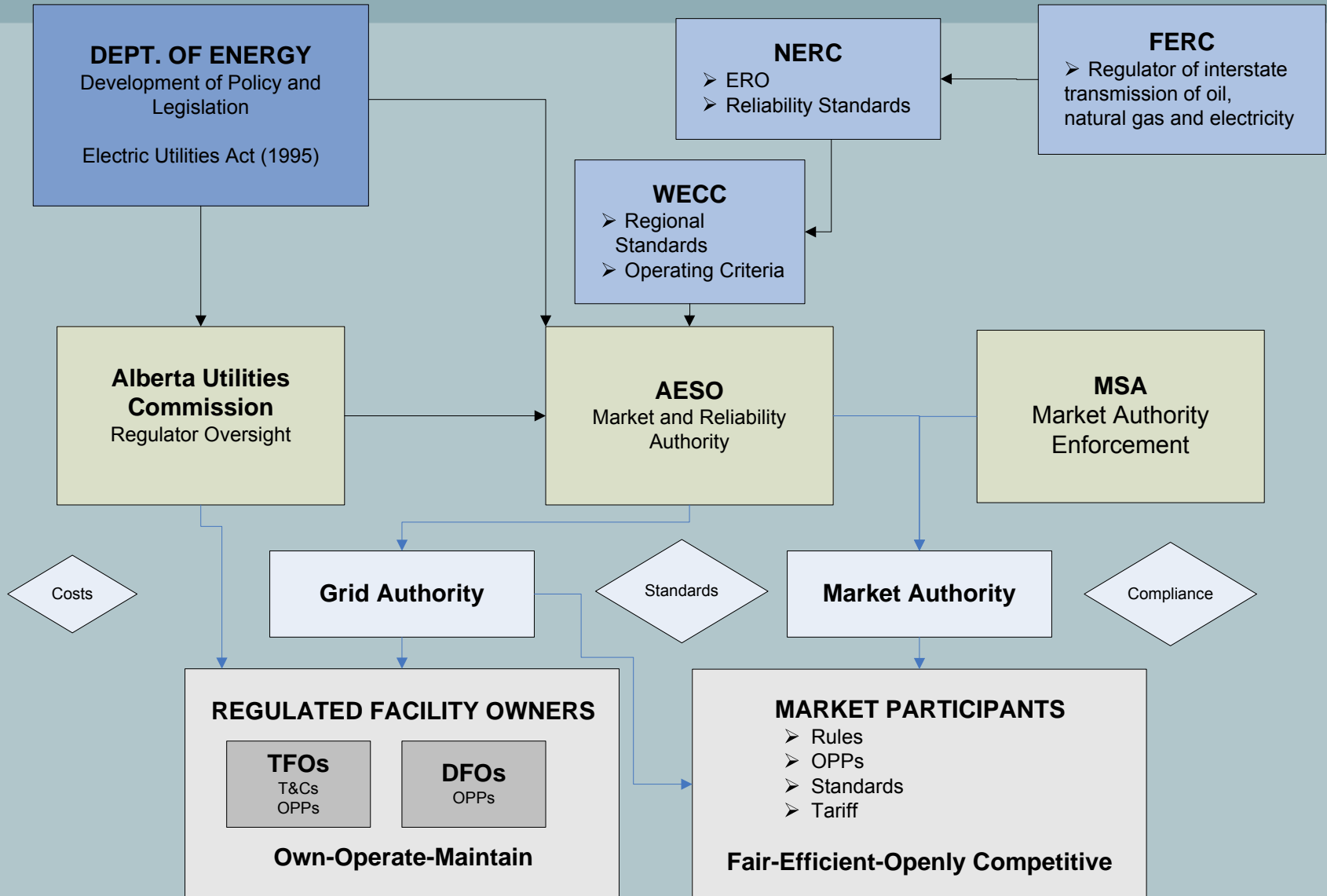
1. AESO staff review the U.S. Reliability Standard with the Alberta Reliability Committee (ARC) and the ARC Work Group
2. ARC advises the AESO on the adoption of the U.S. Reliability Standard as an ARS
3. AESO posts our recommendation on the adoption of the U.S. Reliability Standard as an ARS for broad stakeholder consultation:
  - If the recommendation is to not adopt the U.S. Reliability Standard as an ARS, a recommendation letter will be posted for stakeholder comment
  - or*
  - If the recommendation is to adopt the U.S. Reliability Standard as an ARS, either with or without an Alberta Variance, the ARS will be proposed and included in a ISO rules like stakeholder consultation process

# High Level description of Process

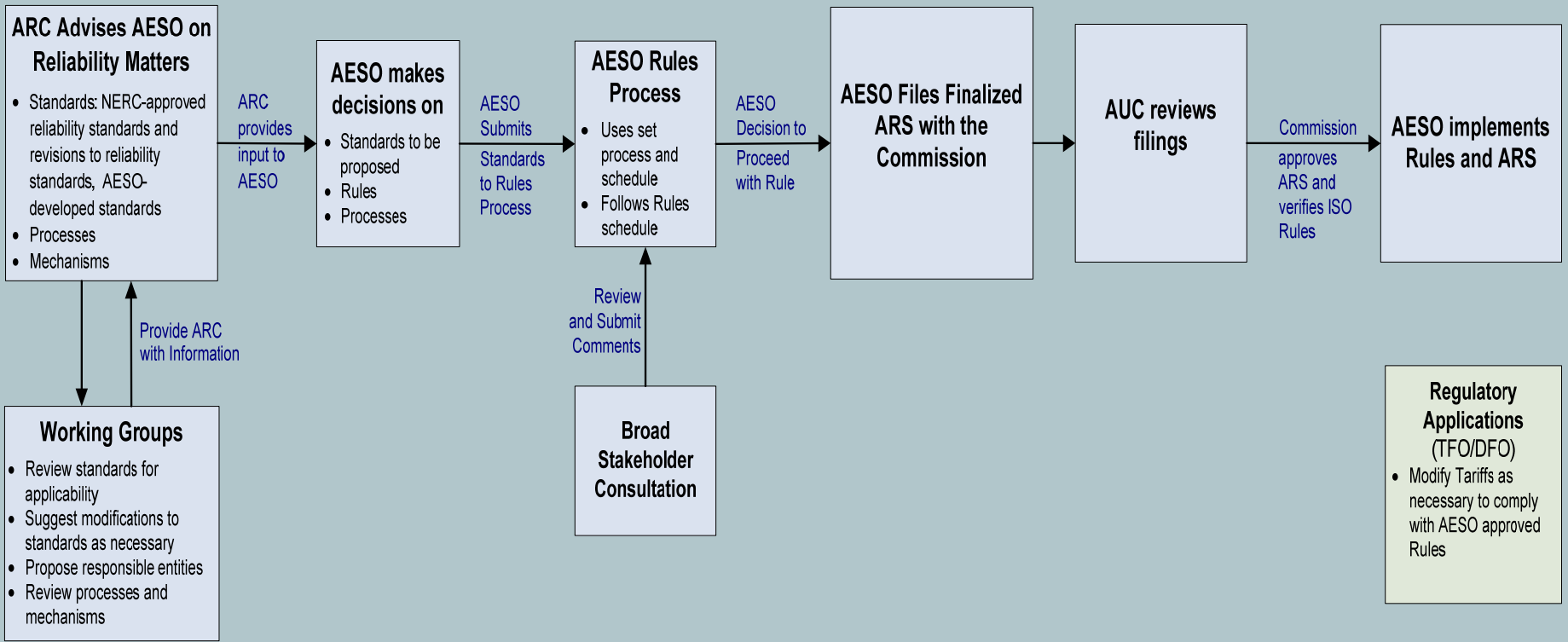


4. ARS process similar to ISO rules process, including public stakeholder review, response to stakeholder comments, submit for AESO executive approval, and file with the AUC
5. Subject to the AUC's approval of the ARS, the ARS takes effect on the effective date as indicated, or as per the AUC requirement
6. WECC and NERC will be notified as these ARS are approved (or not approved)

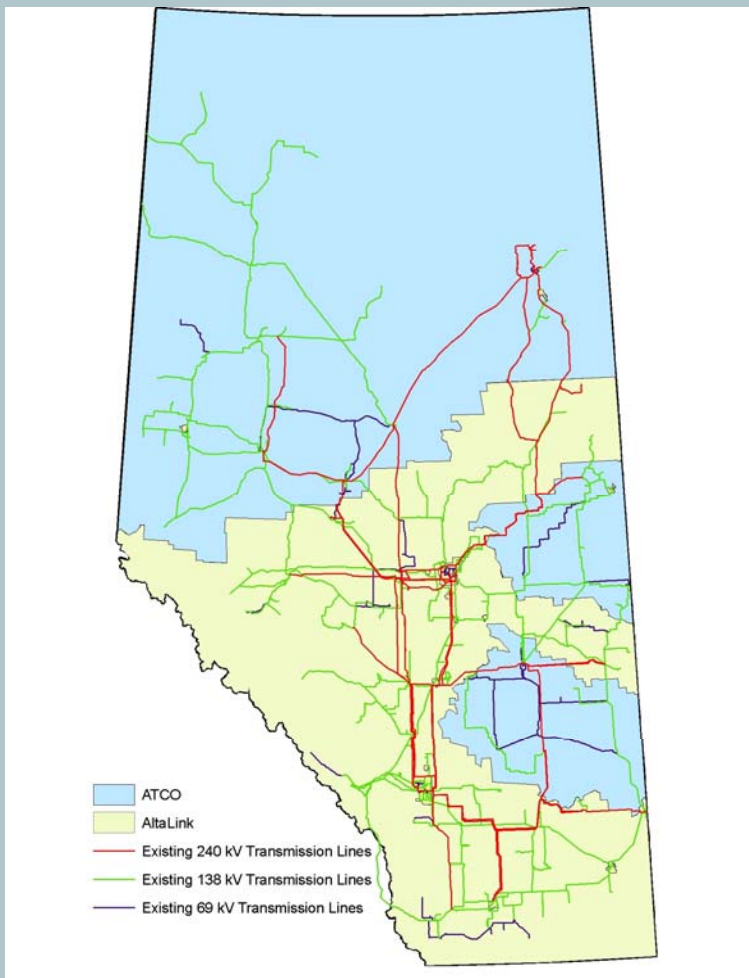
# Regulatory and Reliability Relationships



# Alberta Reliability Standards Development and Approval Process



# Alberta Functional Entities Subject to Reliability Standards



- 7 TFOs (regulated)
  - AltaLink – 38%
  - ATCO – 25%
  - EPCOR (City of Edmonton) – 18%
  - ENMAX (City of Calgary) – 17%
  - City of Red Deer – 2%
  - City of Lethbridge – 2%
  - TransAlta
- 14 ISDs, Medicine Hat
- ~ 280 generating units whose owners also own some transmission assets
- AESO
- Demand customers
- Wire Owners
- Wire Services Providers
- ~ 200 market participants



# Alberta Functional Entities Definitions



Entity Type	Acronym	Definition
Transmission Facility Owner	TFO	Has the same meaning as “owner” and “transmission facility” in the Act
PPA Buyer		Means the entity holding energy rights as acquired from the original purchase of a power purchase arrangement (PPA) as contemplated in the Act, or as subsequently transferred or assigned in whole per Article 18 of the thermal power purchase arrangements
Generator Operator	GOP	Entity that operates a generating unit(s).
Generator Facility Owner	GFO	Has the meaning for “owner” in the Act, of a generating unit
Pool Participant		Means a market participant who is registered to transact, listed in the pool participant list  Also means an <b>importer</b> , an <b>exporter</b> , or a person trading within Alberta registering <b>net settlement instructions</b>

# Alberta Functional Entities Definitions



Entity Type	Acronym	Definition / Functional description for purposes of Reliability Standards
Demand Customers		<p><i>Load system access customers and generation system access customers that consume power, the latter for the purposes of obtaining their back up supply</i></p> <p>e.g.</p> <ul style="list-style-type: none"> <li>• Must be capable of shedding load and shed load when requested</li> <li>• Owns and operates Under Voltage Load shedding Schemes</li> </ul>
Wire Owner	WO	<p>Has the meaning as that provided in the Act for “owner” and “electric distribution system”. Wire owners maintain the responsibilities as that provided in the Act and the Roles, Relationships and Responsibilities Regulation.</p> <p>e.g. a distribution company</p>
Wire Service Providers	WSP	<p>Is a person authorized by a wire owner to act on behalf of that owner.</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>• Altalink Transmission to Fortis Distribution</li> <li>• Transco to Municipality Distribution</li> <li>• Transco to City Distribution</li> </ul> <p>Wires Service Providers provide 24/7 control center functions as part of wires services. Some of these functions are relative to reliability standards.</p>