

Alberta Reliability Standards

Stakeholder Information Session - May 21, 2009

Reliable **Power**

Reliable **Markets**

Reliable **People**



Agenda



1. Background of Alberta Reliability Standards Project

- T-Reg change – mandate of the AESO regarding Alberta Reliability Standards
- Review, approval and implementation process
 - NERC functional entities – Alberta entities mapping
 - Structure of Reliability standards

2. Progress status of Alberta Reliability Standards Project

- Project plan
- Samples of standards

3. Compliance Monitoring of Reliability Standards

- Overview of compliance monitoring
 - Progress update
 - Plans for 2009
- 3.1 Compliance Monitoring Program – Tools and Procedures
 - 3.2 Market Participant Registration
 - 3.3 Question and Answer Period, Next Steps and Closing

Alberta Reliability Standards

Background of Alberta Reliability Standards Project

Jerry Mossing – Director, Operations Planning

May 21, 2009

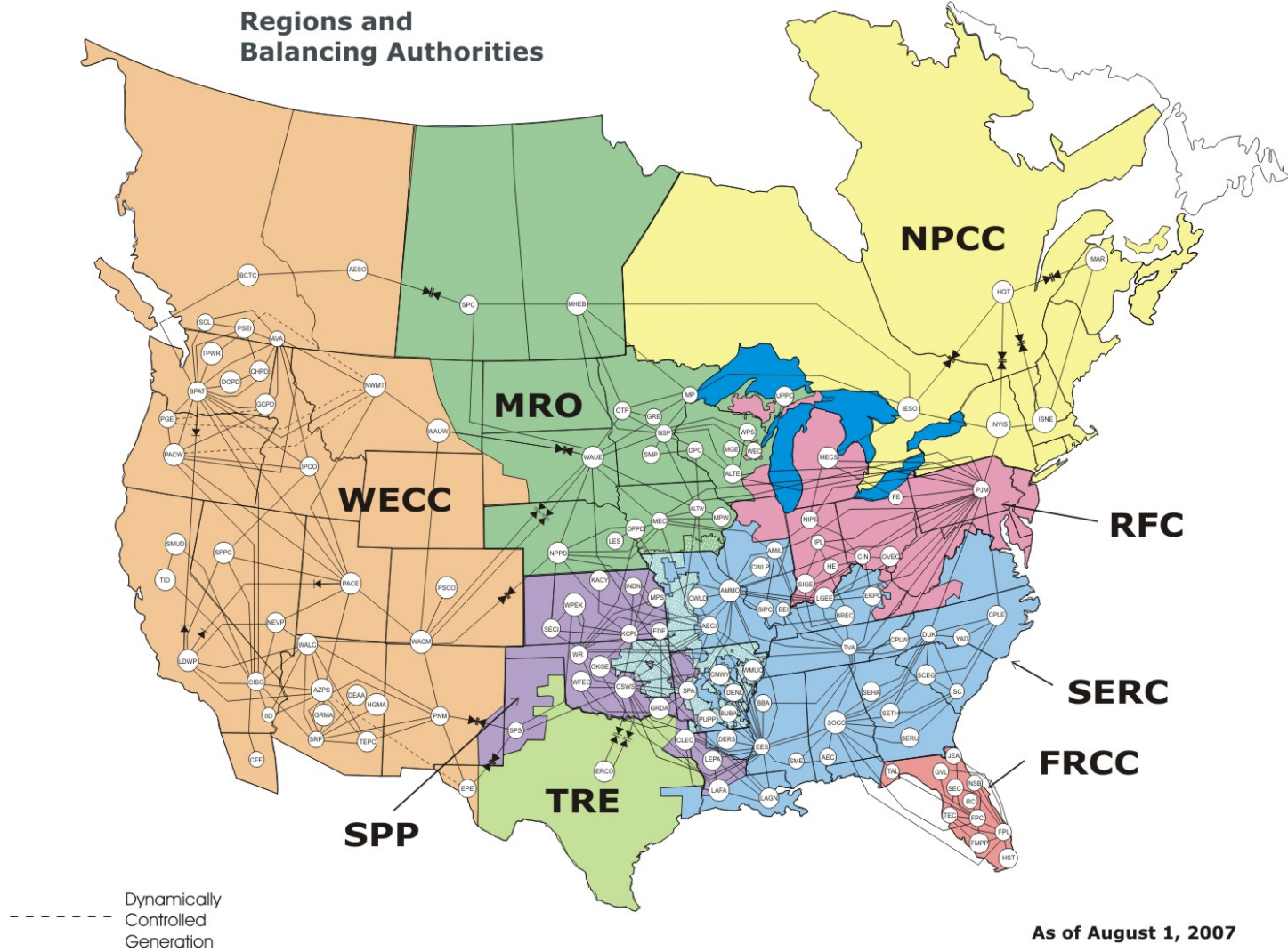
Reliable **Power**

Reliable **Markets**

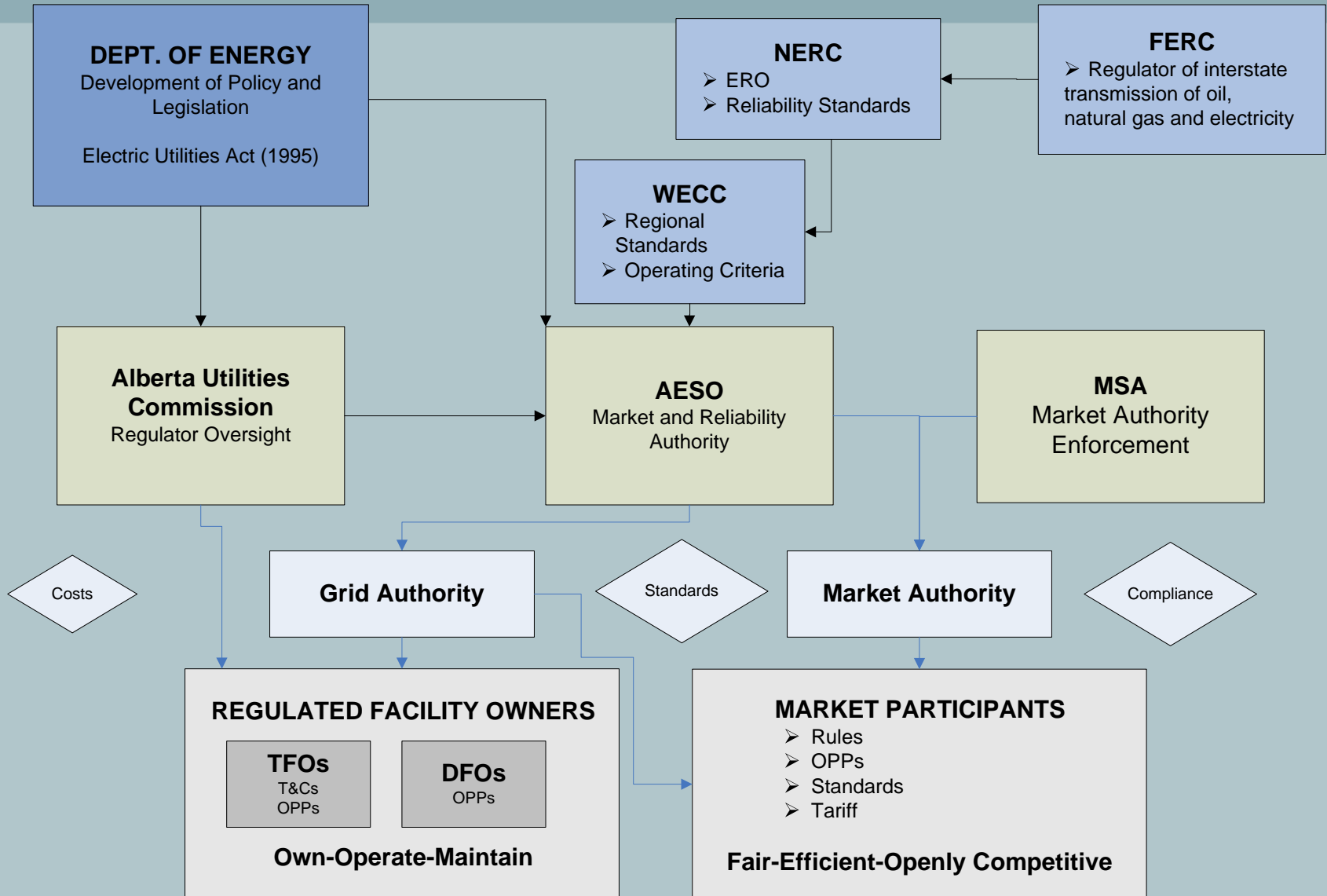
Reliable **People**



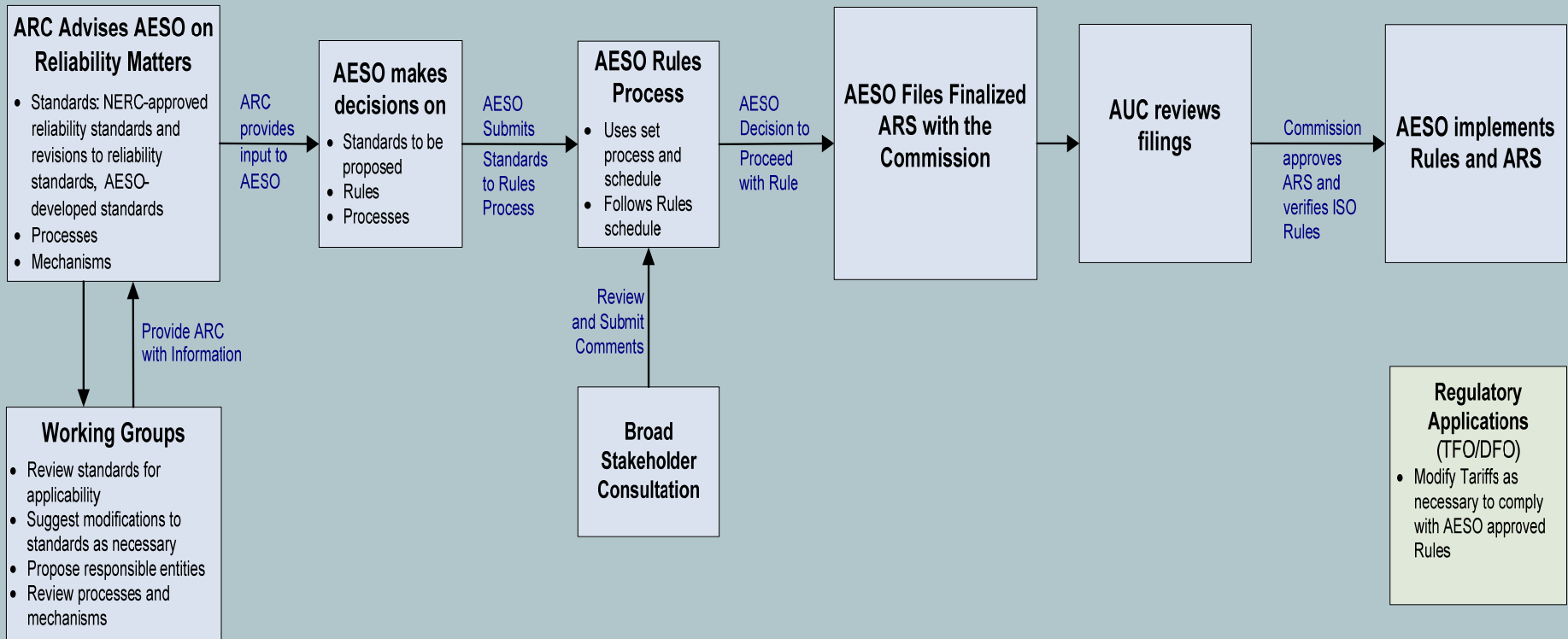
The North America Power Grid



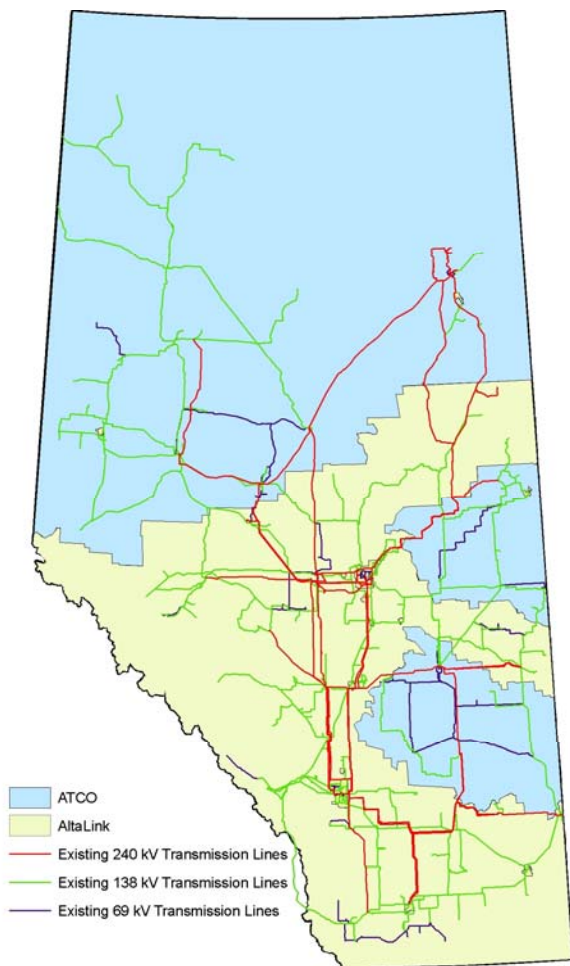
Regulatory and Reliability Relationships



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
- ~ Over 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 provided for “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 as that provided 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 importer , an exporter , or a person trading within Alberta registering net settlement instructions

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</i> that consume power, the latter for the purposes of obtaining their back up supply</p> <p>e.g.</p> <ul style="list-style-type: none"> • Must be capable of shedding load and shed load when requested • Owns and operates Under Voltage Load shedding Schemes
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"> • Altalink Transmission to Fortis Distribution • Transco to Municipality Distribution • Transco to City Distribution <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>

Demand Customers



- ✓ EOP-003 Load Shedding Plans
 - Must shed load when directed
 - Must be capable of implementing load shed to respond to an emergency
- MOD-0xx Various Modeling Standards
 - Must provides data, models, forecasts
- PRC-0xx Protection and Control
 - Provide data
 - Have a documented testing and maintenance program
 - Analysis of protection operations
 - Document misoperations
 - Take corrective action
- TOP-00x Transmission Operations
 - Comply with reliability directives

Wires Services Providers



- ✓ EOP-003 Load Shedding Plans
 - Must shed load when directed
 - Must be capable of implementing load shed to respond to an emergency
- CIP-0xx Various CIP standards
 - To Be Determined
- PRC-0xx Protection and Control
 - Provide data
 - Have a documented testing and maintenance program
 - Analysis of protection operations
 - Document misoperations
 - Take corrective action
- TOP-00x Transmission Operations
 - Comply with reliability directives

- ✓ **EOP-003 Load Shedding Plans**
 - Must shed load when directed
 - Must be capable of implementing load shed to respond to an emergency
- **CIP-001 Sabotage Reporting**
 - Document and implement procedures
 - Reporting including communicate
- **CIP-0xx Various CIP standards**
 - To Be Determined
- **PRC-0xx Protection and Control**
 - Provide data
 - Have a documented testing and maintenance program
 - Analysis of protection operations
 - Document misoperations
 - Take corrective action
- **TOP-00x Transmission Operations**
 - Comply with reliability directives

Pool Participants



- ✓ TOP-005 Operating Reliability Information
 - Provide reliability data
- TOP-00x Transmission Operations
 - Comply with reliability directives
- Importers and Exporters only
 - INT-0xx Various INT standards
 - Comply with E-Tagging requirements

Generator Facility Owners and Generation Operators



		AESO - Existing Rules, Tariff and Technical Standards					NERC
Transmission Connected Generator	30 MVA+	Power System Stabilizer					
	20 MVA+	Generator Testing and Validation					NERC Compliance Registry for a generating unit
	15 MW+	Regulating Reserves					
	10 MW +	Governor	Spinning Reserves				
	10 MVA+	VRT - Non Wind Generators					
	5 MW+	VRT- Wind Generators	MO-MC - except wind	7x24 Operator-Wind	Supplemental Reserves		
	5 MVA+	SCADA					
	Any Size	Disturbance Recording - Key Locations	Transmission Data Requirements (incl ratings)	Comm. Requirements	Voltage Regulation / Voltage Control	Reactive Power (0.9 lag / 0.95 lead)	NERC Compliance Registry if the facility is greater than 75 MVA
	Off Nominal Frequency Requirements	PSS - if facility is 75 MVA+	Internal Generating Plant Event Log	Comply with Reliability Directives	System Restoration		

Alberta Reliability Standards

Project Status Updates

Anita Lee - Manager Operating policies and Procedures

May 21, 2009

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Status Update



<u>Completion Date</u>	<u>Number of standards*</u>	<u>Total</u>
Oct 2008	3 (completed)	3
Jan 2009	8 (completed)	11
Apr 2009	2 (completed)	13
Jul 2009	41 (consultation on-going)	54
Oct 2009	19 (future)	73
Jan 2010	17 (future)	90
Apr 2010	14 (future)	104
Jul 2010	21 (future)	125
Oct 2010	8 (future)	133

* Please see handout for detailed list

Status Update



- Consultation and approval process for Alberta Reliability Standards is very similar to the ISO Rules process
- Stakeholders are given a 4 week period for comments
- Alberta Reliability Standards are filed with the Alberta Utilities Commission for approval

Information Links



- Information regarding Alberta Reliability Standards can be found by this link:

<http://www.aeso.ca/rulesprocedures/17004.html>

- Latest project plan
- Current Alberta Reliability Standards
- Proposed Alberta Reliability Standards
- Monthly Activity Reports regarding Reliability Standards

Alberta Reliability Standards Samples



- FAC-003-AB-1 Transmission Vegetation Management Program
 - Conversion document of PRC-022-AB-1 Under-Voltage Load Shedding Program Performance
- * Please see handouts

Alberta Reliability Standards

Compliance Monitoring

Pavel Bardos – Manager, Compliance
May 21, 2009

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Objectives



- General overview of compliance
 - Reliability standards
- Market Participants Readiness
- Progress to date
- High level introduction to:
 - Compliance Monitoring Program (CMP)
 - Reliability Standards Registration Guideline

AESO's Role in Compliance – General Overview



- AESO is mandated through legislation to monitor compliance with
 - ISO Rules, Reliability Standards and AUC Rule 21
- The authority to monitor compliance with Reliability Standards is given in Transmission Regulation Section 23
- AESO does not carry out the ‘enforcement’ role
- ISO rule 12 sets out in general the compliance monitoring process

ISO rule 12 Applicability to Reliability Standards



- ISO rule 12 typical process
 - collection and verification of data and information
 - analysis and assessment of ‘suspected contravention’ to a rule or standard
 - ‘referral’ of the ‘suspected contravention’ to the Market Surveillance Administrator (MSA)
- Compliance Monitoring Program provides more detail on the monitoring processes specific to reliability standards
 - For details refer to Alberta Reliability Standards Compliance Monitoring Program (CMP), posted on the AESO web site

Monitoring Reliability Standards



- Level of monitoring aligns with NERC program
 - Includes the same components as NERC
 - Active monitoring approach – scheduled activities
- As we are implementing various components,
 - All effective standards will be passively monitored
 - Non-compliance will be referred

Market Participant Readiness



- Market participant is expected to:
 1. Register for their respective functions
 2. Self-certify for approved standards
 3. Report on standards that participant is registered for
 4. Be aware of newly approved standards
 5. Comply to approved standards
 1. Operationally, and
 2. Administratively

Work done to date with industry on compliance



- In 2008 AESO worked with an industry workgroup to develop a compliance monitoring program for Alberta, specifically to Reliability Standards
 - Workgroup objectives... *‘Work together to develop a compliance program that meets requirements in an efficient and manageable way, reducing high efforts, costs and stresses of compliance in some jurisdictions in the US’*
- Deliverables of Compliance Working Group:
 - Compliance Monitoring Program (CMP) document
 - Posted on AESO website and provided to ARC for information
 - Reliability Standards Registration Guideline
 - Posted on AESO website and provided to ARC for information

Compliance Monitoring Program Highlights

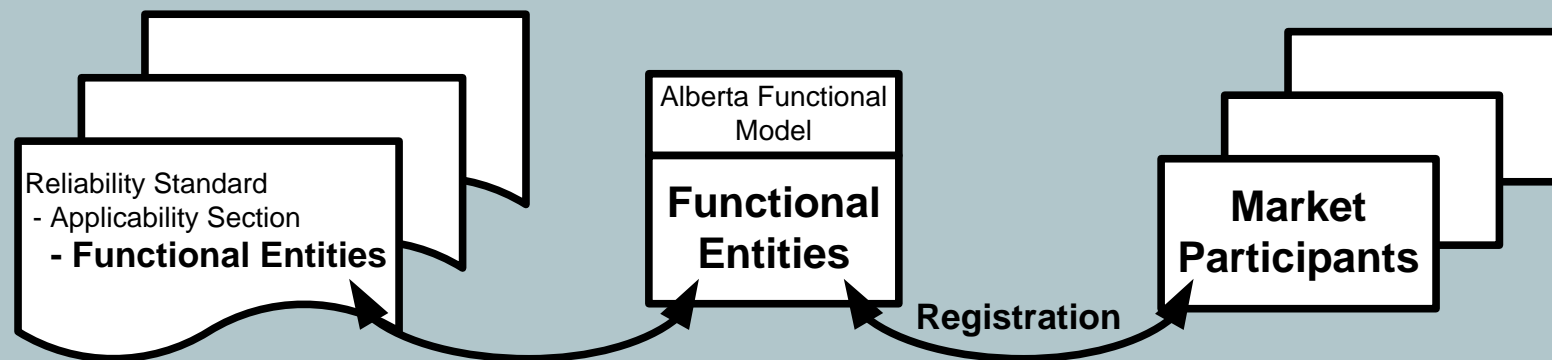


The CMP document describes the tools and processes which will be utilized in monitoring of market participants compliance with reliability standards:

1. Compliance Monitoring Audit
 - a. Table Top Audit (with on site visit option) – 5 year cycle
 - b. Spot Check Audits
2. Self-Certification
3. Self-Reporting
4. Exception Reporting
5. Periodic Reporting

Registration Guideline Highlights

- In order for the AESO to carry out its compliance monitoring function it is important identify market participants with material impact on reliability of the AIES.
- Additionally it is important for market participants to understand which reliability standards are applicable them.
- The relationship between reliability standards and market participants is derived through registration of market participants for functional entities as defined in Alberta Functional Model.



Registration Guideline Highlights



- The criteria for registration is based on Alberta Functional Model
- The AESO will assign Applicability of a Reliability Standard to appropriate Functional Entities through the standards adoption process
- Registration of a Market Participant to a Functional Entity
 - a) Initial (roll-out) registration stage: The AESO will create on best-effort basis a list of market participants with their affiliation to the functional entities and communicate this list to the participants. In return will ask participants to confirm or dispute assigned affiliation and provide compliance contacts.
 - b) Post-Initial registration stage
- Reliability Standards Exemption Registration Process
 - Based on assigned applicability the AESO will describe eligibility conditions for granting an exemption.

Reliability Standards Compliance Registry



- The Reliability Standards Registry will be posted on the AESO web site.
- Market participants listed in the registry are responsible for compliance with applicable reliability standards. They will be subject to the AESO's compliance monitoring program.
- The AESO will not actively monitor for compliance with the reliability standards market participants that are not registered for their affiliation for their functional entity. However, the market participants that are not initially placed on the registry, but are identified subsequently as having a material impact on AIES reliability, will be added to the registry.

Reliability Standards Compliance Registry - Format



- The following is an example of the Reliability Standards Compliance Registry. This registry will be posted on the AESO website.

	<i>Functional Entity</i>							
<i>Company Name</i>	<i>Transmission Facility Owner</i>	<i>Generator Facility Owner</i>	<i>Generator Operator</i>	<i>PPA Buyer</i>	<i>Pool Participant</i>	<i>Wire Owner (DFO)</i>	<i>Demand Customer</i>	<i>Wire Service Provider</i>
<i>Company 1</i>	X	X	X		X	X	X	X
<i>Company 2</i>				X	X			
<i>Company 3</i>	X		X		X			
<i>Company 4</i>					X			
<i>Company 5</i>		X			X			
<i>Company 6</i>						X	X	X
<i>Company 7</i>		X						

- Please advise us if you have any concerns with making this information public.

Reliability Standards Registration - Timeline



- Plan to publish an initial assignment of registration information for all market participants - 2nd part of June no later than July 1st, 2009.
- Open the initial registration on July 1, 2009
- Expected completion (majority of market participants) by the end of September 2009

Compliance Monitoring Links and Contacts



Reliability Standards compliance monitoring page

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

Compliance Monitoring Program

http://www.aeso.ca/downloads/ARS_CMP_Final_v1_0.pdf

Alberta Reliability Standards Registration Guideline

http://www.aeso.ca/downloads/Reliability_Standards_Registration_version_1.pdf

Contacts:

Pavel Bardos - Manager, Compliance

pavel.bardos@aeso.ca

403.539.2834

Daniela Cismaru - Senior Analyst, Compliance

daniela.cismaru@aeso.ca

403.539.2643