

# AESO Reliability Committee (ARC)

Meeting December 17, 2007

AESO Offices

Reliable **Power**

Reliable **Markets**

Reliable **People**



# Background

## North American Industry Changes



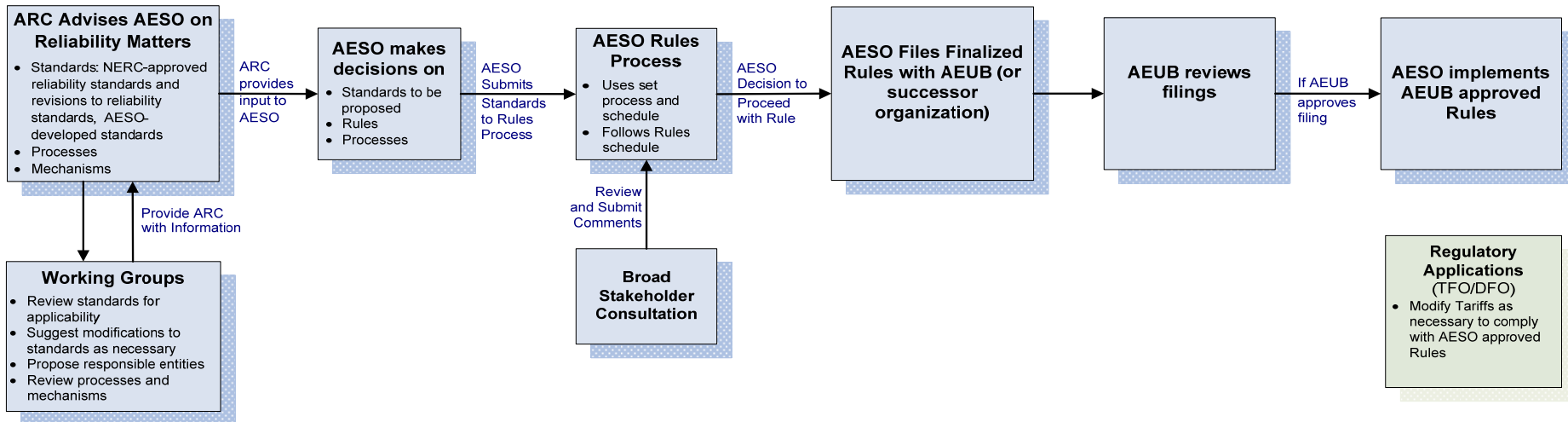
- Industry-wide support to implement consistent set of reliability standards in North America
- NERC operational as ERO in US (Certified by FERC in July/06)
- FERC approved 91 NERC standards
- US Delegation agreements between NERC and WECC approved by FERC – delegates ERO compliance enforcement authority to WECC
- Compliance Registry set up for US bulk system owners, operators, users that identifies who is responsible for compliance with standards
- WECC has implemented Compliance Enforcement Program in US

# Alberta Reliability Framework



- Alberta Department of Energy creates policy and legislation to support reliability of the Alberta interconnected electric system
- AESO ensures reliability of AIES; plans transmission facilities to meet the needs of load and generation; monitors compliance with Alberta Standards and rules
- The Market Surveillance Administrator performs the prosecution function of Alberta entities as may be required
- Alberta Energy and Utilities Board regulates the electric industry and approves Alberta Standards
- Alberta Framework does not align well with NERC Functional Model – AESO not a Registered Entity

# AESO Reliability Committee (ARC) and Standards Development / Approval Process



**Notes:** All AEUB-approved Rules (incl. Standards) will be posted on AESO website  
 Standards requiring immediate attention will follow an expedited Rules process

*This flow chart provides an overview of the process that the AESO will use to review standards, rules, mechanisms, and processes, seek industry and stakeholders input and obtain regulatory approval*

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# Role of ARC



- Serves as a forum for owners, operators and users of the transmission system to provide advice to the AESO respecting standards, criteria, procedures, rules and processes regarding maintenance, security and reliability matters, and is being established in compliance with sections 5(3), 5(4) and 19(4)(a) of the *Transmission Regulation* (AR 86 / 2007).
- Provides a high level industry perspective as opposed to detailed and specific comments on individual standards.
- In addition, working groups will be set up to provide input to the detailed requirements contained within standards.

- Meeting Frequency
  - Propose 5 meetings for 2008
  - 2009 and beyond – as required
- Minutes
  - Posted on AESO website
    - ARC feedback
    - AESO responses
    - Action items

# MRS Project – Deliverables



- Comprehensive Alberta program
  - Enhanced reliability of the Alberta grid
  - Supports a North America-wide implementation of a substantially common set of “reliability standards”
  - Implements Alberta-approved reliability standards
  - Monitors entities for adherence to applicable standards
  - Ensures compliance to standards

# MRS Project – Streams of Work



- Stakeholder Activities
  - Clarify relationships, responsibilities/authorities - information
  - Appropriate level of stakeholder involvement - input
  - Establish ARC and working groups – efficient vehicle
- Documentation and Agreements
  - Review authoritative documents
  - Implement agreements with external agencies and others (if needed)
- Reliability Standards (RSs)
  - Develop standards development and approval processes, and implement RSs in Alberta
- Identification Process
  - Assign accountabilities for NERC/WECC and AESO AB-approved RSs
- Compliance Monitoring and Enforcement Program
  - Have an efficient and effective program for monitoring and enforcing compliance with reliability standards

# Preliminary Assessment of the FERC-Approved Reliability Standards



- **‘Preliminary Assessment of FERC-approved NERC Standards’** report included in pre-meeting materials
- Preliminary assessments subject to revision and modification as recommended by the ARC or ARC working groups

# Background and Purpose



- For NERC and WECC criteria / standards, the practice in Alberta has been for the AESO and Alberta entities to generally operate to those standards as good utility practice. This has been verified by previous NERC/WECC audits and reviews of AESO and TFOs
- Significant difference between the rigor applied to compliance reviews and self-assessments under the previous voluntary system of compliance with standards and criteria, and a compliance audit under a mandatory compliance regime with significant penalties and sanctions
- Under a mandatory compliance regime, the standards and responsibilities for compliance with these standards must be fully documented
- Jurisdictional authorities in Alberta must be maintained with appropriate approvals of standards to make them mandatory
- The NERC functional model structure does not align with the responsibilities and reliability framework in Alberta

# Questions to be addressed



- Which Alberta entities are responsible for each standard requirement?
- Which standards have shared or overlapping responsibilities?
- What documentation, or changes to current agreements/mechanisms are required to formally document the standard and responsibilities?
- Which standards may need to be revised to apply in Alberta?
- What work must be done to verify compliance with these standards in Alberta?
- What is the NERC functional model and how does it relate to the reliability framework and responsible entities in Alberta?

# Overview of 91 FERC-approved NERC Standards



- Ninety-one (91) NERC or WECC-developed standards have been approved by the Federal Energy Regulatory Commission (FERC) and are now mandatory in the US; 83 were approved March 7th, and 8 WECC Regional/RMS standards were approved June 11th
- There are more than 50 NERC standards in various stages of development and approval

# Table of FERC-Approved Standards by Standard Type



Acronym	Standard	# of Standards
BAL	Resource and Demand Balancing	6
COM	Communications	2
CIP	Critical Infrastructure Protection	1
EOP	Emergency Preparedness and Operations	8
FAC	Facilities Design, Connections, and Maintenance	6
INT	Interchange Scheduling and Coordination	9
IRO	Interconnection Reliability Operations and Coordination	9
MOD	Modeling, Data, and Analysis	10
PER	Personnel Performance, Training, and Qualifications	4
PRC	Protection and Control	14
TOP	Transmission Operations	8
TPL	Transmission Planning	4
VAR	Voltage and Reactive	2
WECC	WECC Regional Standards (Tier 1)	8
<b>14</b>	<b>TOTAL</b>	<b>91</b>

# Preliminary Analysis – “Readiness” of Standards for Use in Alberta



- Simple screening criteria:
  - Can full compliance be achieved including supporting documentation?
  - Did the AESO or TFO report full compliance in a 2006 or 2005 WECC Self- Assessment program? (self-assessments did not include all requirements of a standard)
  - Is the standard applicable/fit for use in Alberta (i.e. some current methods meet spirit but not letter of standard)

# Preliminary Analysis – “Readiness” of Standards for Use in Alberta



Necessary action to implement standard	Number of standards
No modification to standard required	17
An agreement with WECC or another external entity is required to identify who is responsible to comply with the standard	26
Require improvements to documentation of AESO, TFO, DFO, etc. processes or new documents to identify who is responsible to comply with the standard and its parts	43
Require revisions to represent operations in Alberta or WECC (i.e. may apply in the East but not in WECC or AB).	5

# Responsibilities of Reliability Entities in Alberta for FERC-Approved Standards



Responsibilities for 91 FERC-approved NERC standards	# of standards in each category *
AESO accountable without TFO, GFO or DFO support	21
AESO is accountable with TFO infrastructure required	23
AESO accountable with TFO operational support	34
TFO is accountable	11
AESO and TFO shared accountabilities	8
AESO and TFO accountable but DFO participation is required	8
AESO accountable requiring GO support	10
AESO accountable requiring DFO support	8
GFO accountable	4
WECC or the Reliability Coordinator is accountable	8

\* There is an overlap of responsibilities for some standards therefore the total listed in the table is greater than 91 (e.g. PRC-015-0 Special Protection System Data Documentation applies to the AESO, TFOs DFOs, and GFOs).

# Incompatibility with Alberta Practices

Standard	Title
MOD-006-0	Procedures for Use of CBM Values
MOD-007-0	Documentation of the Use of CBM
MOD-019-0	Forecasts of Interruptible Demands and DCLM Data
MOD-020-0	Providing Interruptible Demands and DCLM Data
MOD-021-0	Accounting Methodology for Effects of Controllable DSM in Forecasts



# Proposed Actions



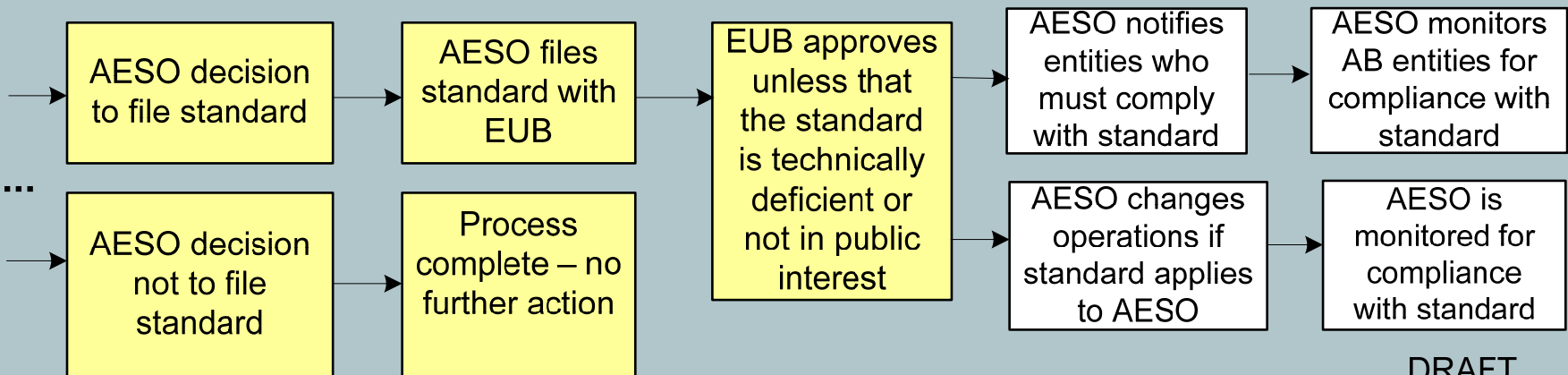
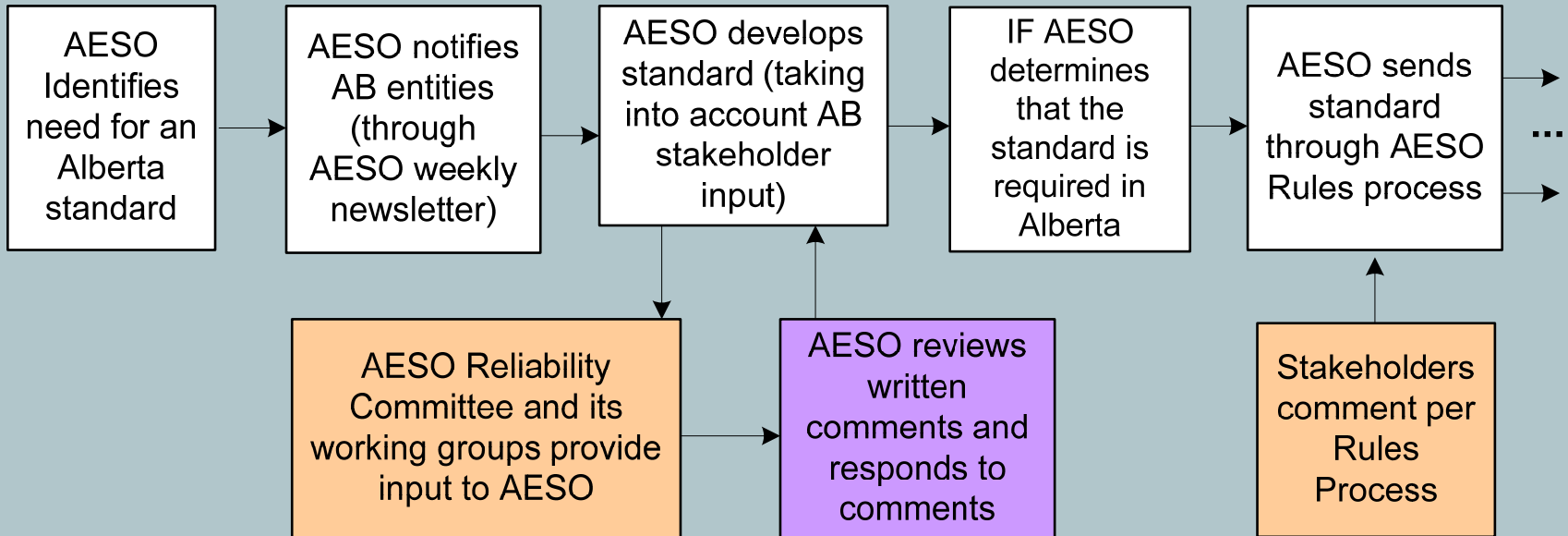
- AESO establishes a relationship with the WECC to clarify RC task accountabilities
  - WECC / AESO Operating Agreement
- Standards mapped to Alberta framework or rewritten to specify/delineate accountabilities for the AESO and TFOs
  - ARC and ARC Work Groups
- Monitoring of AESO by WECC no more stringent than AESO monitoring of other AB entities
  - Design of Compliance Monitoring Program
- Means to accommodate the size and scope of each TFO
  - ARC Input
- Identify AESO and AB entities accountabilities at the requirement level of the reliability standards
  - ARC and ARC Work Groups
- AESO to review authoritative documents (ISO Rules, Ts&Cs, system access service agreements and pool participation agreements)
  - ARC Input

# ARC Work Plan and Deliverables



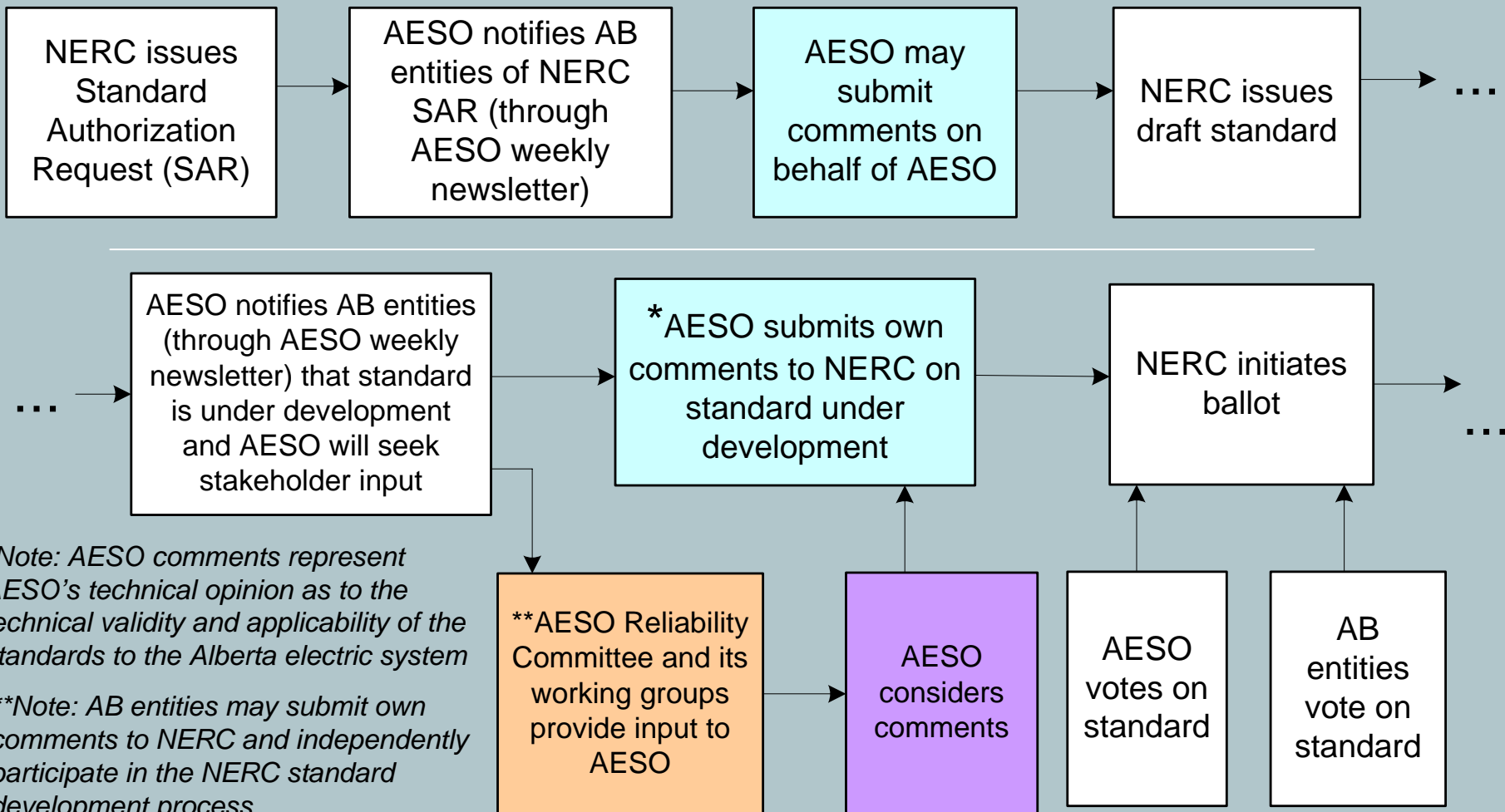
- ARC Meeting Frequency
  - 5 times in 2008
- Work Group meetings
  - At least monthly or ‘as required’
- ARC interaction with Work Groups
  - ARC to endorse the Work Group Terms of Reference
  - Work Groups are assigned standards by ARC
  - Work Groups report to ARC
  - Structure of Work Groups is to be open and flexible
- Deliverables
  - First set of Standards submitted to AESO Rules Process by end of Q2
  - Second set by end of Q4, then as required
- Request – Need your feedback by Jan 9<sup>th</sup> (Wed)
  - Comments on work group terms of reference
  - Commitment of resources to work groups
  - “Names” of work group participants
- Set ARC meeting dates for 2008

# 1. Alberta-developed Standards Future Process



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# 2. NERC-developed Standards (a) Future Process

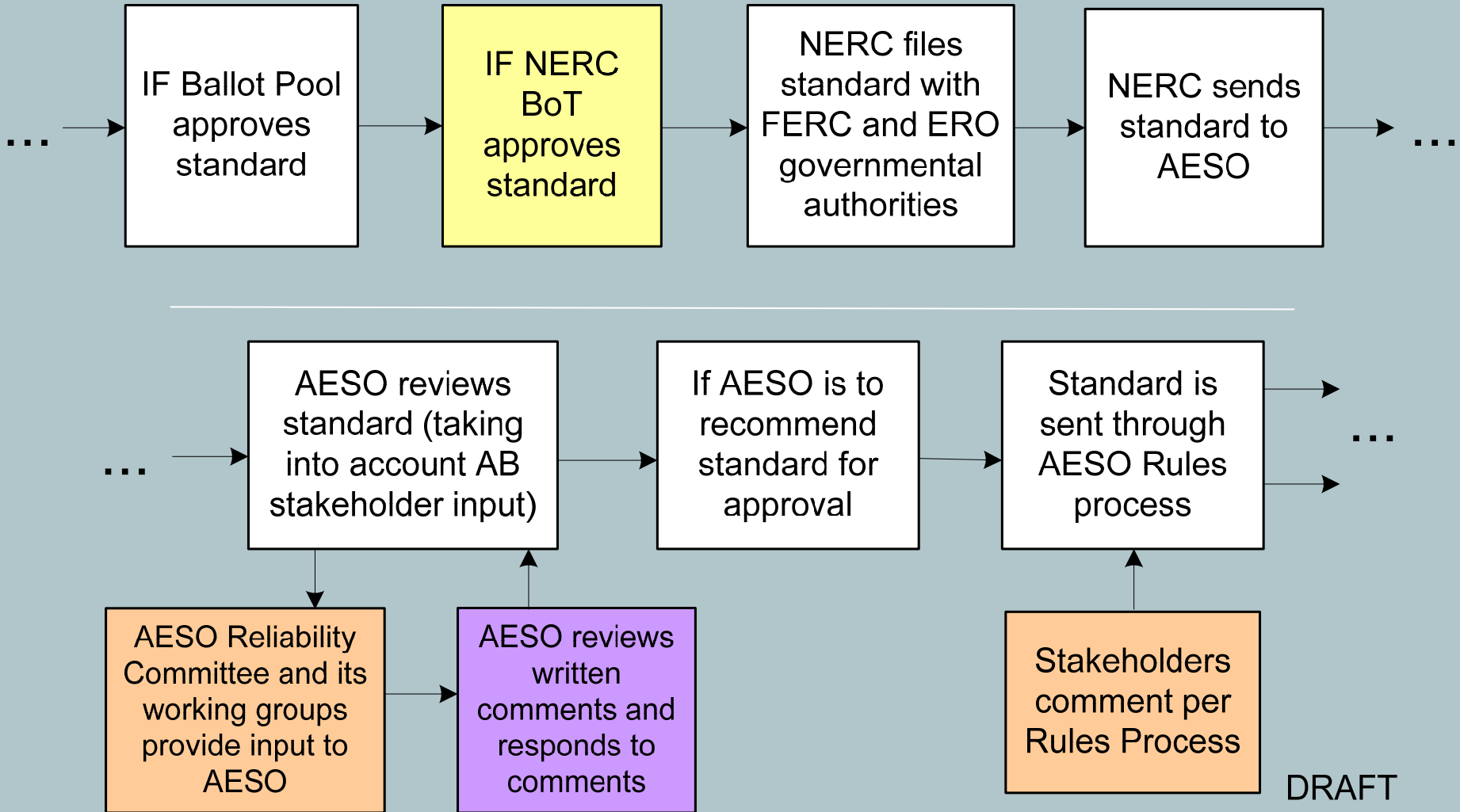


*\*Note: AESO comments represent AESO's technical opinion as to the technical validity and applicability of the standards to the Alberta electric system*

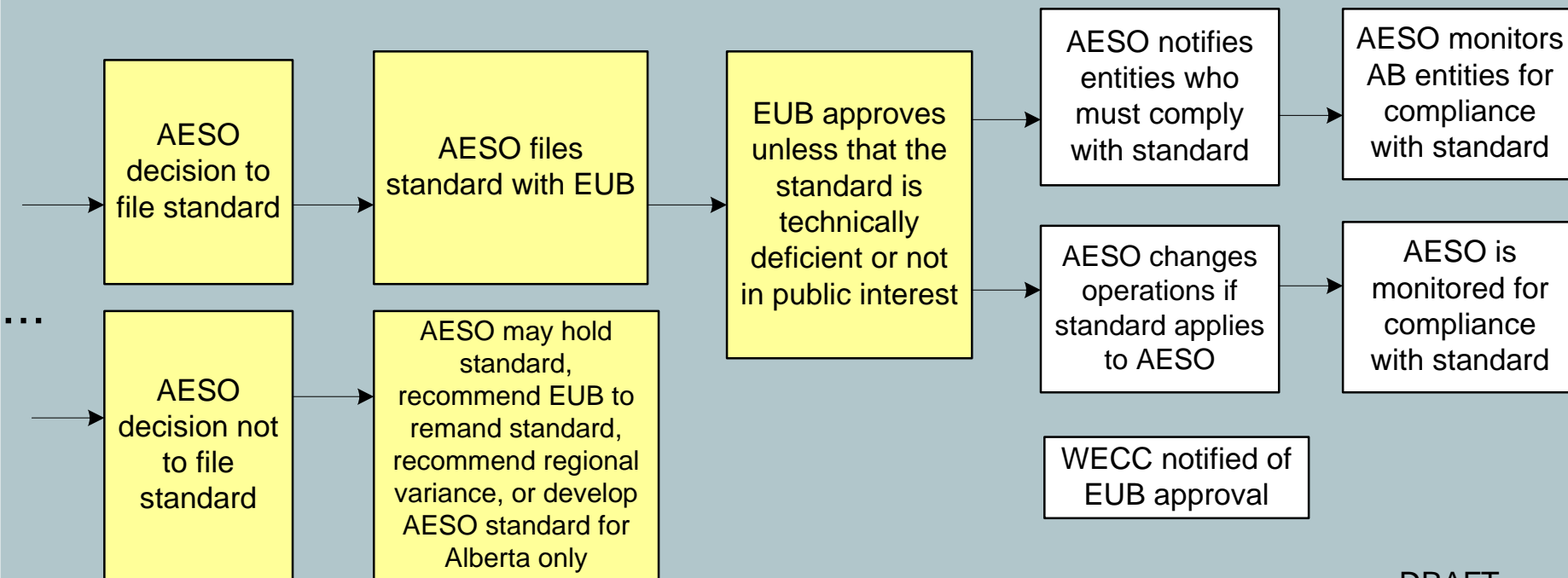
*\*\*Note: AB entities may submit own comments to NERC and independently participate in the NERC standard development process*

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## 2. NERC-developed Standards (b) Future Process

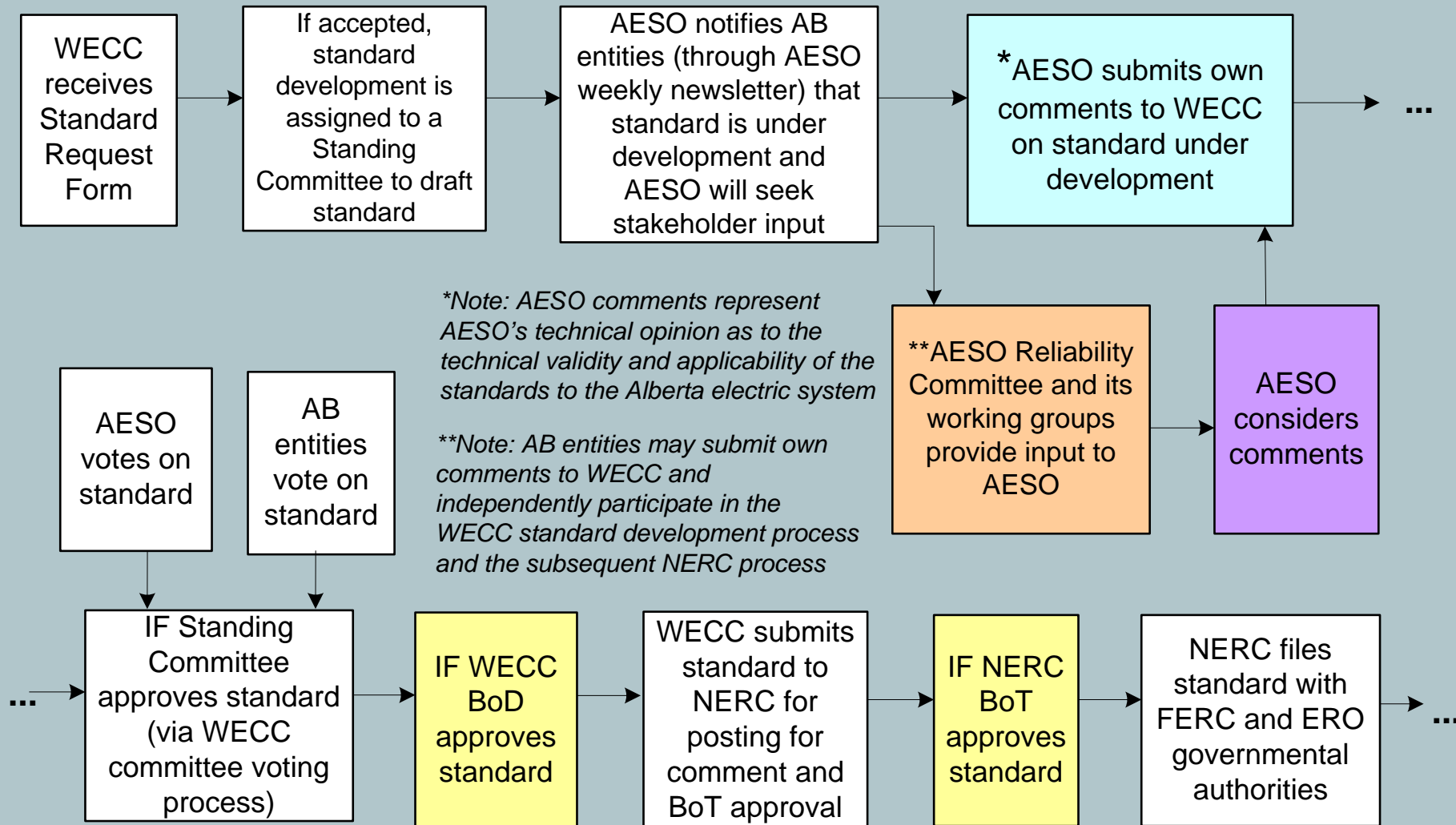


# 2. NERC-developed standards (c) Future Process

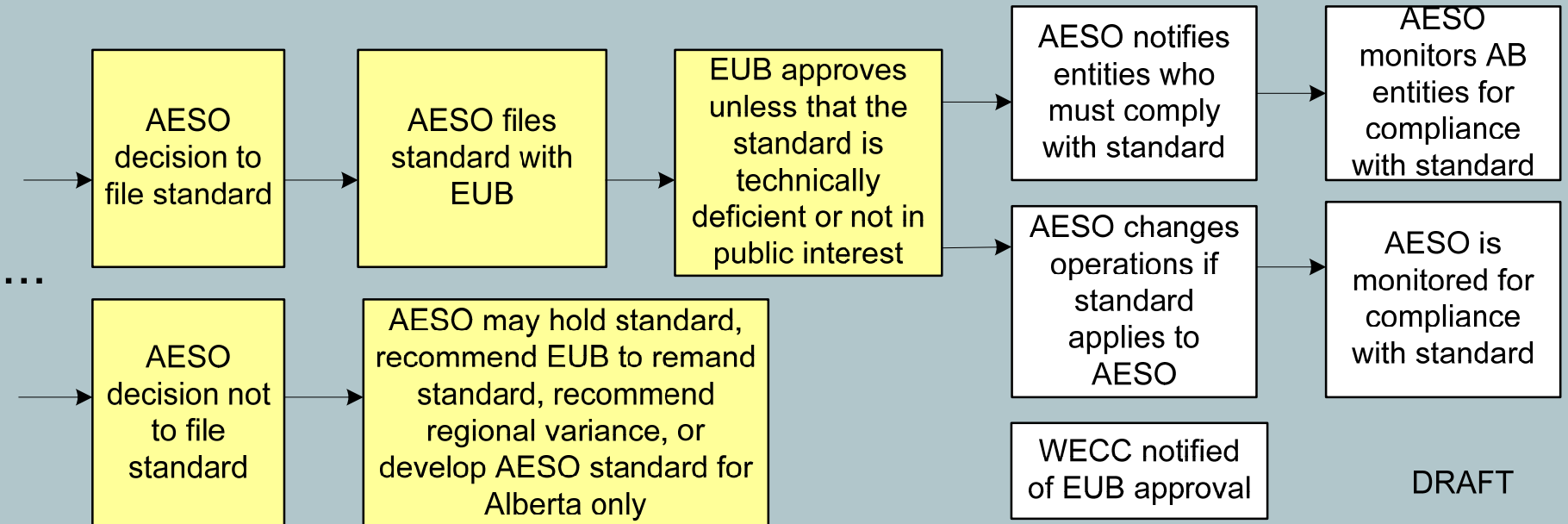
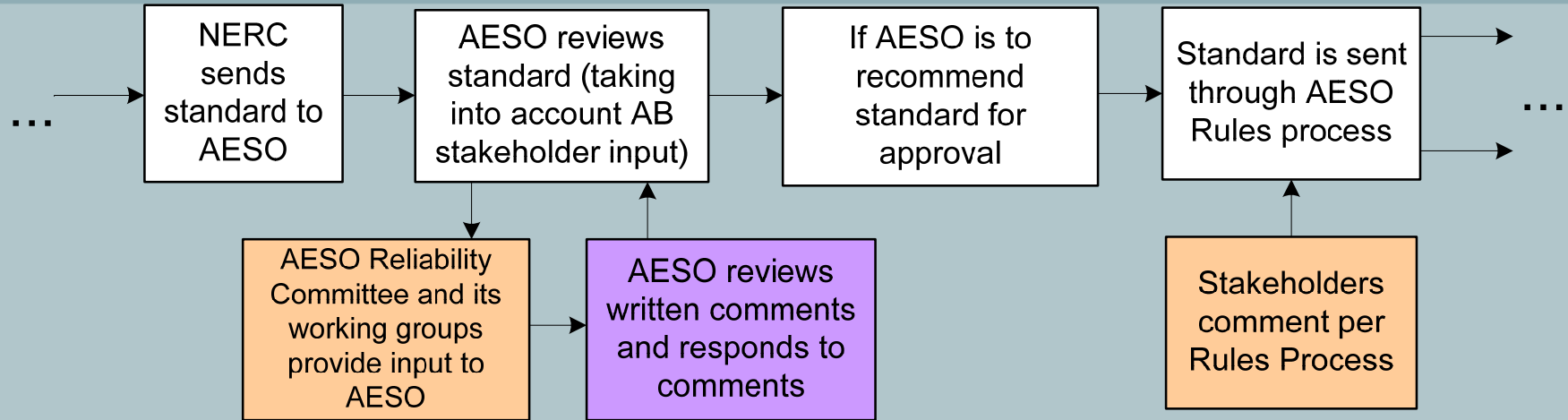


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# 3. WECC-developed Standards (a) Future Process



# 3. WECC-developed Standards (b) Future Process



# Questions and Comments

