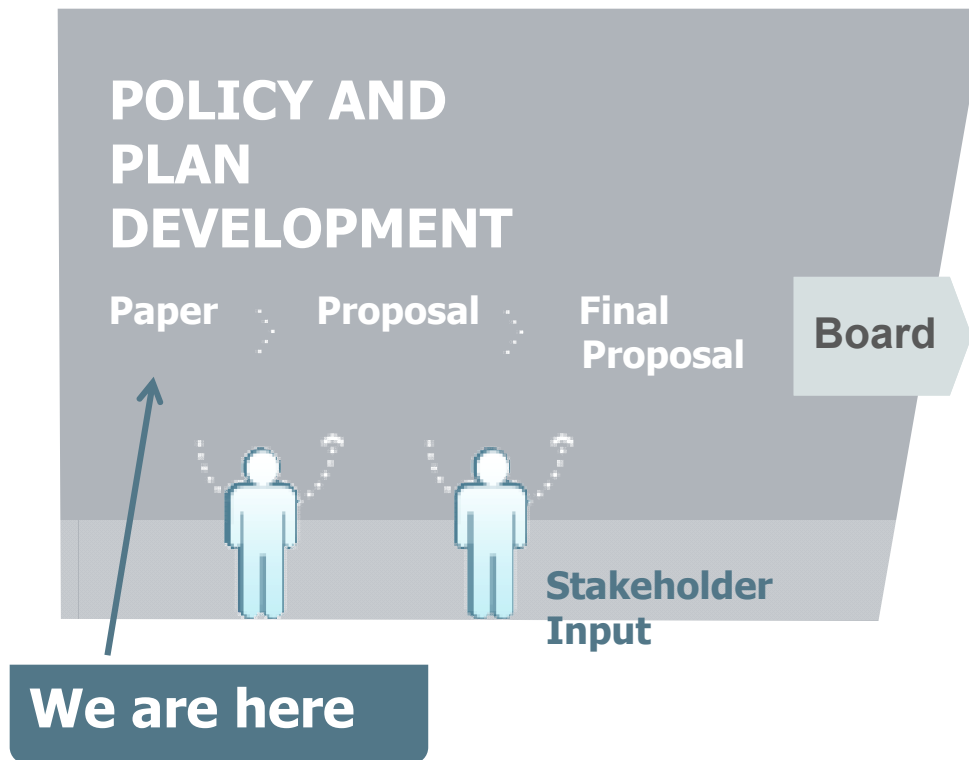


ISO Stakeholder Initiative Process For TPS



Agenda – May 2, 2011

ISO Planning Standards Stakeholder Meeting

1. Introductions and Meeting Arrangements
2. Standards
 - A. SF/GBA generation outage - retired
 - B. Combined line and generator outage – no change
 - C. Specific nuclear units – no change
 - D. Combined cycle module as G-1 – added
 - E. Voltage - added
 - F. New transmission vs. involuntary load interruption – revised
3. Guidelines
 - A. New Special Protection Systems – revised
4. Glossary
5. Next Steps and Schedule

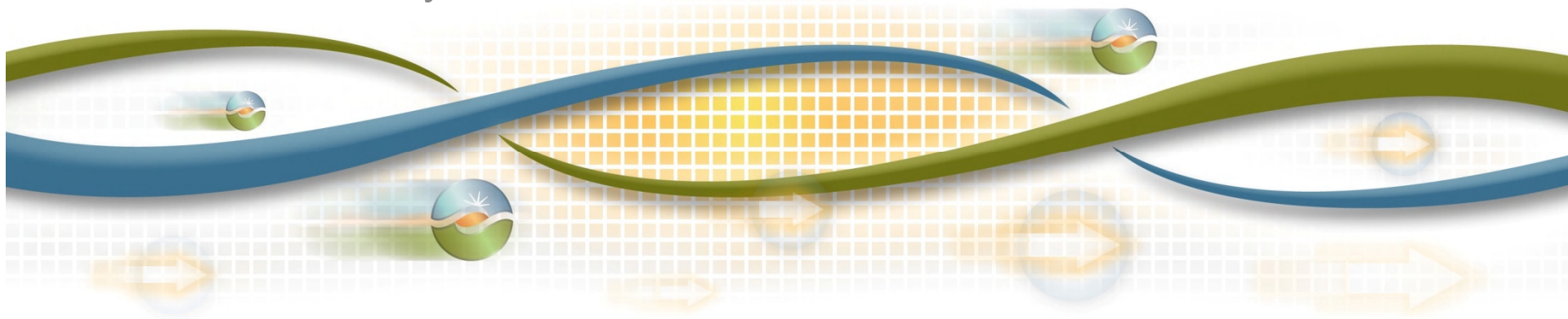
ISO Planning Standards

Catalin Micsa

Lead Regional Transmission Engineer

Stakeholder Meeting

May 2, 2011



Introduction

Status of updates to the ISO Planning Standards:

- Current approved standards have been in place since 2002

<http://www.caiso.com/docs/09003a6080/14/37/09003a608014374a.pdf>

- 2008 stakeholder process was discontinued in 2008

<http://www.caiso.com/1c58/1c58e461106b0.html>

- Current stakeholder process initiated to revise planning standards

<http://www.caiso.com/2b61/2b6197d15eb0.html>

Existing Standards and Criteria

During its planning activities ISO must :

- Follow all NERC Reliability Standards like
<http://www.nerc.com/page.php?cid=2|20>
 - Transmission Planning (TPL)
 - Nuclear Plant Interface Requirements (NUC-001)
- Follow all WECC Regional Criteria
<http://www.wecc.biz/Standards/WECC%20Criteria/Forms/AllItems.aspx>
- Follow ISO Planning Standards

New Structure and Documentation for the ISO Planning Standards

Standards:

- Combined Line and Generator Outage Standard
- Voltage
- Specific Nuclear Unit
- Loss of Combined Cycle Power Plant Module as a Single Generator Outage
- Planning for New Transmission versus Involuntary Load Interruption

Guidelines:

- New Special Protection Systems

Retirement of

San Francisco Greater Bay Area Generation Outage Standard:

- Eliminated requirements related to Hunters Point and Potrero
- San Francisco reliability is independent of generation requirement
- New transmission infrastructure has reduced the Greater Bay Area's overall dependence on generation
- Additional planned transmission infrastructure will further diminish the Greater Bay Area's overall dependence on generation

Some standards were not changed

Combined Line and Generator Outage Standard:

- One generator out of service followed by system readjustment and a single line outage should meet NERC TPL002 reliability standard for single contingencies

Specific Nuclear Unit Standards:

- Respect Appendix E of the Transmission Control Agreement regarding nuclear power plants

<http://www.caiso.com/docs/09003a6080/25/a3/09003a608025a3bd.pdf>

Old enforcement is now a standard

Loss of Combined Cycle Power Plant Module as a Single Generator Outage Standard:

- ISO has consistently enforced this standard
- Measure is based on historical data and “greater than 1 event over a 3 year period”
- Exceptions are possible
 - After 2 years of operation
 - Supported by historical data
 - Addressed on a case by case base only

New standard is proposed

Voltage Standard:

- Common denominator is envisioned across ISO
- Low voltage and voltage deviation apply to load (including generator auxiliary load) buses
- High voltage apply to all buses
- Exceptions allowed if vetted through open process

Voltage level	Normal Conditions (TPL-001)		Contingency Conditions (TPL-002 & TPL-003)		Voltage Deviation	
	Vmin (pu)	Vmax (pu)	Vmin (pu)	Vmax (pu)	TPL-002	TPL-003
<= 200 kV	0.95	1.1	0.90	1.1	≤5%	≤10%
>= 200 kV	0.95	1.1	0.90	1.1	≤5%	≤10%
>= 500 kV	1.0	1.1	N/A	1.1	N/A	N/A

Revised standard

Planning for New Transmission versus Involuntary Load Interruption Standard:

- Continues to rely on NERC standards and WECC regional criteria
- New write-up and changes will address:
- Caps amount of involuntary load interruption based on WECC self imposed reporting requirements
- Establishes a maximum level for radial substations
- Establishes minimum sizing of back-tie(s) for radial loads
- Allows justification of transmission reinforcements through BCR calculation on a case by case basis



Planning for New Transmission versus Involuntary Load Interruption Standard

1. No single contingency with load drop above 250 MW

- Cap NERC TPL002 footnote for single contingencies
- Avoids WECC reporting requirements for single contingencies

2. All substations of 100 MW or more need to be looped

- Standardize PTOs substations design
- Does not preclude substations with less than 100 MW from being looped in

Planning for New Transmission versus Involuntary Load Interruption Standard

3. Minimum size for back-tie(s)

- Most stringent between 50% of peak load or 80% of the hours in the year (based on actual load shape for the area)
- Maintains a minimum level of back-tie(s) in order to assure a minimum level of service consistent across the system

4. Benefit to Cost Ratio > 1 may justify upgrades

- Allow elimination or reduction in load drop exposure if it has overall economic benefits
- BCR calculation to be supplied with the project through the open window and discussed in an open stakeholder process

This guideline was slightly modified

New Special Protection Systems Guideline:

- Small revisions to the existing guidelines
- Applies to new SPS for both load and generation
- Eliminated restriction on SPS for RMR units
- No changes to maximum arming amounts
- Increased the number of contingencies (single or double) that would trigger the operation of SPS from 4 to 6 local contingencies

Glossary

Here are a few examples:

- Bulk Electric System – all facilities under ISO control
- Development of load models – PTOs, UDCs and others
- Development of load forecast – CEC
- Projected customer demand
 - 1 in 5 load level for regional studies
 - 1 in 10 load level for local area studies
- Timed allowed for manual readjustment – less than 30 minutes

Next Steps - Schedule

Overall timeline

- Post draft ISO Planning Standards April 25, 2011
- Stakeholder Meeting to discuss changes May 2, 2011
- Submit comments by May 9, 2011
- Posting of second draft ISO Planning Standards May 13, 2011
- ISO Stakeholder conference call May 20, 2011
- Submit comments by May 27, 2011
- Finalize ISO Planning Standards June 2, 2011
- ISO Board of Governors June 29-30, 2011
- Implementation July 1, 2011



Your comments and questions are welcome.

For written comments, please send to: RegionalTransmission@caiso.com