

Updates to the ISO Planning Standards

Catalin Micsa Senior Advisor Engineer Regional Transmission North September 13, 2017



ISO Planning Standards

- Planning standards are critical to providing reliable service to customers.
- Form the foundation or basis for all planning activities.
- ISO required to adhere to:
 - NERC Reliability Standards
 - WECC regional standards, criteria and business practices
- ISO's FERC-approved tariff provides for the approval of Planning Standards by the ISO's Board of Governors, which provides the necessary vehicle for needs specific to the ISO controlled grid to be properly addressed in ensuring acceptable system reliability.



Scope of Changes to ISO Transmission Planning Standards

- The ISO is proposing to modify the ISO Planning Standards due to changes to the WECC Regional Criteria (TPL-001-WECC-CRT-3).
- There is one area that the ISO is planning on making the specific changes to Planning Standards as follows:
 - Changes to Voltage Standard



Proposed changes to ISO Voltage Standard

- Simplify and re-write a few paragraphs.
- Change reference to current TPL-001-WECC-CRT-3
- Change voltage deviation limit to 8% (from current 5%) for single contingencies (P1 and P3)
- Eliminate voltage deviation limit for all other contingencies (from current 5% (P2) and 10% all other)
- Memorialize exceptions and clarifications by PTO area.



Exceptions and Clarifications PG&E:

Facility	Nominal Voltage	Steady State Pre-Contingency		Steady State Post-Contingency	
		High (kV/p.u.)	Low (kV/p.u.)	High (kV/p.u.)	Low (kV/p.u.)
DCPP bus	500 kV	545/1.090	512/1.024	550/1.100	512/1.024
All other buses	500 kV	550/1.100	518/1.036	550/1.100	473/0.946
DCPP bus	230 kV	242/1.052	218/0.948	242/1.052	207/0.900
Los Esteros bus	230 kV	242/1.052	219/0.952	245/1.065	207/0.900
All other buses	230 kV	242/1.052	219/0.952	253/1.100	207/0.900
All buses	115 kV	121/1.052	109/0.948	121/1.052 ¹	104/0.904
All buses	70 kV	72.5/1.036	66.5/0.950	72.0/1.036	63.0/0.900
All buses	60 kV	63.0/1.050	57.0/0.950	66.0/1.100	54.0/0.900

^[1] PG&E Utility Standard TD1036S allows 115 kV voltages to operate as high as 126 kV until capital projects can be placed into service to achieve a desired operating limit of 121 kV.



Exceptions and Clarifications SCE:

		Steady State		Steady State	
Facility	Nominal	Pre-Contingency		Post-Contingency	
raciity	Voltage	High	Low	High	Low
		(kV/p.u.)	(kV/p.u.)	(kV/p.u.)	(kV/p.u.)
All buses	525 kV	540/1.029	520/0.990	550/1.048 ²	498.8/0.950
Alamitos, Arcogen,					
Huntington, Beach,	230 kV	230/1.000	220/0.957	230/1.000 ²	207/0.900
Mandalay, Redondo					
Bailey, Chevmain,					
Cima, Colorado					
River, Cool Water,					
Eagle Mt., Eagle					
Rock, El Casco,					
Gene, Harborgen,					
Highwind, Iron Mt.,	230 kV	241.5/1.050	218.5/0.95	245/1.065 ²	207/0.900
Inyo, Ivanpah,					
Johanna, Lewis,					
Primm, Rancho Vista,					
Red Bluff, Sandlot,					
Santiago, Serrano,					
Whirlwind, Windhub					
All other buses	230 kV	241.5/1.050	218.5/0.95	242/1.052 ²	207/0.900
Eagle Mtn, Blythe	161 kV	169/1.050 ²	152.95/0.950	169/1.050 ²	144.9/0.900
Cool Water, Inyokern,	115 kV	120 75/1 050	109 25/0 950	121/1 052 ²	103 5/0 900
Kramer, Victor		120.75/1.050	103.20/0.300	121/1.002	100.0/0.000
Control, Inyo	115 kV	120.75/1.05	117/1.026	121/1.052 ²	114.5/0.996
All other buses	115 kV	120.75/1.050	109.25/0.950	123/1.070 ²	103.5/0.900
All buses	66 kV	69.3/1.050	62.7/0.950	72.5/1.090 ²	59.4/0.900

^[1] Due to equipment (circuit breaker) voltage limit.



Exceptions and Clarifications SDG&E:

Facility	Nominal Voltage	Steady State Pre-Contingency		Steady State Post-Contingency	
		High Limit (kV)	Low Limit (kV)	High Limit (kV)	Low Limit (kV)
All buses	500 kV	550/1.100	498.8/0.998	550/1.100	472.5/0.945
All buses	230 kV	241.5/1.050	218.5/0.950	241.5/1.050	207/0.900
All buses	138 kV	144.9/1.050	131.1/0.950	144.9/1.050	124.2/0.900
All buses	69 kV	72.5/1.051	65.6/0.951	72.5/1.051	62.1/0.900



Exceptions and Clarifications VEA:

System Fac	Facility	Steady State Pre-Contingency		Steady State Post-Contingency	
	гасшту	High (kV/p.u.)	Low (kV/p.u.)	High (kV/p.u.)	Low (kV/p.u.)
All buses	230 kV	241.5/1.050	218.5/0.950	241.5/1.050	218.5/0.950
All buses	138 kV	144.9/1.050	131.1/0.950	144.9/1.050	131.1/0.950

Exceptions and Clarifications Trans Bay Cable:

System	Facility	Steady State Pre-Contingency		Steady State Post-Contingency	
		High Limit (kV/p.u.)	Low Limit (kV/p.u.)	High Limit (kV/p.u.)	Low Limit (kV/p.u.)
All buses	230 kV	241.5/1.050	218.5/0.950	253/1.100	207/0.900
All buses	115 kV	120.75/1.050	109.25/0.950	126.5/1.100	103.5/0.900



Schedule for Revision to ISO Planning Standards

Date	Action
September 6	Post issue paper/straw proposal
September 13	Stakeholder web conference
September 27	Stakeholder comments due by 5:00 p.m.
October 4	Incorporate comments
November 1-2	ISO Board meeting



Stakeholder Comments on Final Straw Proposal

 Stakeholder comments are to be submitted by September 27, 2017 to: regionaltransmission@caiso.com

