

2012/2013 ISO Reliability Assessment - Preliminary Study Results

Study Area: **PG&E Los Padres - Summer Peak**

Thermal Overloads

ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-T-001	MESA_PGE-UNION OL 115 kV #1 Line	Morro Bay 230/115 Bank #6 & 7	C3	T-1-1	91.7%	98.0%	102.5%	Monitor/drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-T-002	PALMR-ZACA 115 kV #1 Line	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line
LP-S-T-003	S.YNZ JT-CABRILLO 115 kV #1 Line	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line
LP-S-T-004	S.YNZ JT-ZACA 115 kV #1 Line	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line
LP-S-T-005	SISQUOC-PALMR 115 kV #1 Line	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line
LP-S-T-006	SN LS OB-SNTA MRA 115 kV #1 Line	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line
LP-S-T-007	SN LS OB-SNTA MRA 115 kV #1 Line	Morro Bay-Diablo 230 kV Line and Morro Bay-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line

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ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-T-008	SN LS OB-SNTA MRA 115 kV #1 Line	Morro Bay-Mesa 230 kV Line and iablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line
LP-S-T-009	SN LS OB-SNTA MRA 115 kV #1 Line	Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line
LP-S-T-010	SN LS OB-SNTA MRA 115 kV #1 Line	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line
LP-S-T-011	SISQUOC-PALMR 115 kV #1 Line	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line
LP-S-T-012	S.YNZ JT-ZACA 115 kV #1 Line	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line
LP-S-T-013	S.YNZ JT-CABRILLO 115 kV #1 Line	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line
LP-S-T-014	PALMR-ZACA 115 kV #1 Line	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line

Please note the winter peak scenario for the Los Padres area was not studied per the 2012/2013 Study Plan.

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Study Area: **PG&E Los Padres - Summer Light Load & Summer Off-Peak**

Thermal Overloads

ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)			Potential Mitigation Solutions
					2014 Summer Light Load	2017 Summer Off-Peak	N/A	
LP-NPK-T-001	SN LS OB-SNTA MRA 115 kV #1 Line	Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	C5-DCTL	L-2	<100%	115.5%		Monitor loading level/drop load/existing SPS
LP-NPK-T-002	SN LS OB-SNTA MRA 115 kV #1 Line	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	<100%	115.3%		Monitor loading level/drop load/existing SPS
LP-NPK-T-003	SISQUOC-PALMR 115 kV #1 Line	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	<100%	141.7%		Monitor loading level/drop load/existing SPS
LP-NPK-T-004	S.YNZ JT-ZACA 115 kV #1 Line	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	<100%	157.4%		Monitor loading level/drop load/existing SPS
LP-NPK-T-005	S.YNZ JT-CABRILLO 115 kV #1 Line	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	<100%	131.8%		Monitor loading level/drop load/existing SPS
LP-NPK-T-006	PALMR-ZACA 115 kV #1 Line	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	<100%	140.9%		Monitor loading level/drop load/existing SPS
LP-NPK-T-007	SN LS OB-SNTA MRA 115 kV #1 Line	Morro Bay-Diablo 230 kV Line and Morro Bay-Mesa 230 kV Line	C3	L-1-1	<100%	115.5%		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line
LP-NPK-T-008	SISQUOC-PALMR 115 kV #1 Line	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	<100%	141.7%		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line
LP-NPK-T-009	S.YNZ JT-ZACA 115 kV #1 Line	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	<100%	157.4%		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line
LP-NPK-T-010	S.YNZ JT-CABRILLO 115 kV #1 Line	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	<100%	131.8%		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line

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Study Area: **PG&E Los Padres - Summer Light Load & Summer Off-Peak**



Thermal Overloads

ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)			Potential Mitigation Solutions
					2014 Summer Light Load	2017 Summer Off-Peak	N/A	
LP-NPK-T-011	PALMR-ZACA 115 kV #1 Line	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	<100%	140.9%		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV Line

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Study Area: **PG&E Los Padres - Summer Peak**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-VD-001	CHOLAME 70 kV	Arco-Cholame 70 kV Line	B	L-1	3.9%	4.6%	5.1%	Monitor voltage deviation
LP-S-VD-002	VAFB SSA 70 kV	Divide-Vandenberg 70 kV #1 Line	B	L-1	-6.0%	-5.9%	-6.0%	Instal reactive support
LP-S-VD-003	BUELLTON 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-004	CABRILLO 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-005	DIVIDE 70 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-006	DIVVIDE 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-007	FAIRWAY 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-008	GAREY 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-009	LMPC-CTY 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-010	MANVILLE 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-011	PALMR 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line

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ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-VD-012	PURISIMA 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-013	S.M.ASSO 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-014	SISQUOC 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-015	SNTA MRA 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-016	SNTA YNZ 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-017	SURF 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-018	VAFB SSA 70 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-019	VAFB SSB 70 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-020	ZACA 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB (Bus-tie)	Diverged	Diverged	Diverged	Sectionalize Mesa 115 kV bus/close-in idle Midway-Santa Maria 115 kV Line/drop load. Convert to 230 kV line
LP-S-VD-021	BUELLTON 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-VD-022	CABRILLO 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Action plan/drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line
LP-S-VD-023	DIABLOCN 230 kV	Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-024	DIVIDE 70 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-025	DIVVIDE 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-026	FAIRWAY 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-027	GAREY 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-028	LMPC-CTY 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-029	MANVILLE 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-030	MESA PGE 230 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-031	MESA_PGE 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-VD-032	OCEANO 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-033	PALMR 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-034	PURISIMA 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-035	S.M.ASSO 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-036	SISQUOC 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-037	SN LS OB 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-038	SNTA MRA 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-039	SNTA YNZ 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-040	SURF 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-041	UNION OL 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-VD-042	VAFB SSA 70 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-043	VAFB SSB 70 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-044	ZACA 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-045	BUELLTON 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-046	BUELLTON 115 kV	Mesa-Divide 115 kV Line #1 & 2	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-047	BUELLTON 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-048	CABRILLO 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-049	CABRILLO 115 kV	Mesa-Divide 115 kV Line #1 & 2	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-050	CABRILLO 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-051	DIVIDE 70 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-VD-052	DIVIDE 70 kV	Mesa-Divide 115 kV Line #1 & 2	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-053	DIVIDE 70 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-054	DIVVIDE 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-055	DIVVIDE 115 kV	Mesa-Divide 115 kV Line #1 & 2	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-056	DIVVIDE 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-057	FAIRWAY 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-058	FAIRWAY 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-059	GAREY 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-060	GAREY 115 kV	Mesa-Sisquoc 115 kV Line and Santa Maria-Sisquoc 115 kV Line	C3	L-1-1	-8.7%	-9.0%	-10.5%	Monitor voltage deviation
LP-S-VD-061	GAREY 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-VD-062	LMPC-CTY 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-063	LMPC-CTY 115 kV	Mesa-Divide 115 kV Line #1 & 2	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-064	LMPC-CTY 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-065	MANVILLE 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-066	MANVILLE 115 kV	Mesa-Divide 115 kV Line #1 & 2	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-067	MANVILLE 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-068	MESA PGE 230 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-069	MESA_PGE 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-070	MESA_PGE 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-071	OCEANO 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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Study Area: **PG&E Los Padres - Summer Peak**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-VD-072	PALMR 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-073	PALMR 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-074	PURISIMA 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-075	PURISIMA 115 kV	Mesa-Divide 115 kV Line #1 & 2	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-076	PURISIMA 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-077	RPSP1013 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-078	RPSP1013 115 kV	Mesa-Divide 115 kV Line #1 & 2	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-079	RPSP1013 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-080	S.M.ASSO 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-081	S.M.ASSO 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

Voltage Deviations

ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-VD-082	SISQUOC 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-083	SISQUOC 115 kV	Mesa-Sisquoc 115 kV Line and Santa Maria-Sisquoc 115 kV Line	C3	L-1-1	-8.7%	-9.0%	-10.5%	Monitor voltage deviation
LP-S-VD-084	SISQUOC 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-085	SNTA MRA 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-086	SNTA MRA 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-087	SNTA YNZ 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-088	SNTA YNZ 115 kV	Mesa-Divide 115 kV Line #1 & 2	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-089	SNTA YNZ 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-090	SURF 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-091	SURF 115 kV	Mesa-Divide 115 kV Line #1 & 2	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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Study Area: **PG&E Los Padres - Summer Peak**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-VD-092	SURF 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-093	TEMPLETN 230 kV	Templeton-Gates 230 kV Line and Morro Bay-Templeton 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-094	UNION OL 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-095	UNION OL 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-096	VAFB A-N 70 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-097	VAFB A-N 70 kV	Mesa-Divide 115 kV Line #1 & 2	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-098	VAFB A-N 70 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-099	VAFB SSA 70 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-100	VAFB SSA 70 kV	Mesa-Divide 115 kV Line #1 & 2	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-101	VAFB SSA 70 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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Study Area: **PG&E Los Padres - Summer Peak**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-VD-102	VAFB SSB 70 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-103	VAFB SSB 70 kV	Mesa-Divide 115 kV Line #1 & 2	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-104	VAFB SSB 70 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-105	ZACA 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-106	ZACA 115 kV	Mesa-Divide 115 kV Line #1 & 2	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-VD-107	ZACA 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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Study Area: **PG&E Los Padres - Summer Light Load & Summer Off-Peak**



Voltage Deviations

ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2014 Summer Light Load	2017 Summer Off-Peak	N/A	
LP-NPK-VD-001	PSA RBL5 70 kV	Paso Robles-Templeton 70 kV Line	B	L-1	-5.78%	-2.63%		Adjust equipment voltage settings
LP-NPK-VD-002	PSA RBL5 70 kV	Templeton 230/70 kV Bank	B	T-1	-5.67%	-2.53%		Adjust equipment voltage settings
LP-NPK-VD-003	DIVIDE 70 kV	Morro Bay PP Unit 3 GSU Bank	B	T-1	-5.10%	0.15%		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-004	S.M.ASSO 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1044	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-005	SISQUOC 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1025	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-006	GAREY 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1026	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-007	SNTA MRA 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.0977	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-008	DIVVIDE 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1306	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-009	FAIRWAY 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1002	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-010	BUELLTON 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1272	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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Study Area: **PG&E Los Padres - Summer Light Load & Summer Off-Peak**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2014 Summer Light Load	2017 Summer Off-Peak	N/A	
LP-NPK-VD-011	SURF 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1306	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-012	PALMR 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.107	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-013	ZACA 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1216	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-014	SNTA YNZ 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1272	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-015	MANVILLE 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1116	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-016	CABRILLO 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1296	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-017	PURISIMA 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1176	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-018	DIVIDE 70 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1377	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-019	VAFB SSA 70 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1399	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-020	VAFB SSB 70 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1383	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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Study Area: **PG&E Los Padres - Summer Light Load & Summer Off-Peak**



Voltage Deviations

ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2014 Summer Light Load	2017 Summer Off-Peak	N/A	
LP-NPK-VD-021	LMPC-CTY 115 kV	CB FAULT AT MESA SUB 115 CB102	C2	CB	-0.1143	Diverged		Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-NPK-VD-022	BUELLTON 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	-3.40%	-19.11%		Monitor voltage deviation/drop load
LP-NPK-VD-023	CABRILLO 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	-4.14%	-22.95%		Monitor voltage deviation/drop load
LP-NPK-VD-024	DIVIDE 70 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	-5.19%	-28.14%		Monitor voltage deviation/action plan/drop load
LP-NPK-VD-025	DIVVIDE 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	-4.92%	-26.65%		Monitor voltage deviation/drop load
LP-NPK-VD-026	FAIRWAY 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	-1.53%	-15.25%		Monitor voltage deviation/drop load
LP-NPK-VD-027	GAREY 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	-1.48%	-15.17%		Monitor voltage deviation/drop load
LP-NPK-VD-028	LMPC-CTY 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	-3.96%	-27.03%		Monitor voltage deviation/drop load
LP-NPK-VD-029	MANVILLE 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	-3.80%	-27.13%		Monitor voltage deviation/drop load
LP-NPK-VD-030	MESA PGE 230 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	-1.15%	-15.98%		Monitor voltage deviation/drop load
LP-NPK-VD-031	OCEANO 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	-0.78%	-11.07%		Monitor voltage deviation/drop load
LP-NPK-VD-032	PALMR 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	-1.48%	-15.30%		Monitor voltage deviation/drop load
LP-NPK-VD-033	PURISIMA 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	-4.16%	-26.96%		Monitor voltage deviation/drop load
LP-NPK-VD-034	S.M.ASSO 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	-1.44%	-15.52%		Monitor voltage deviation/drop load

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Study Area: **PG&E Los Padres - Summer Light Load & Summer Off-Peak**



Voltage Deviations

ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2014 Summer Light Load	2017 Summer Off-Peak	N/A	
LP-NPK-VD-035	SISQUOC 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	-1.48%	-15.16%		Monitor voltage deviation/drop load
LP-NPK-VD-036	SNTA MRA 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	-1.63%	-14.67%		Monitor voltage deviation/drop load
LP-NPK-VD-037	SNTA YNZ 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	-3.40%	-19.11%		Monitor voltage deviation/drop load
LP-NPK-VD-038	SURF 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	-4.27%	-23.66%		Monitor voltage deviation/drop load
LP-NPK-VD-039	UNION OL 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	-1.03%	-12.47%		Monitor voltage deviation/drop load
LP-NPK-VD-040	VAFB SSA 70 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	-5.27%	-28.74%		Monitor voltage deviation/action plan/drop load
LP-NPK-VD-041	VAFB SSB 70 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	-5.21%	-28.28%		Monitor voltage deviation/action plan/drop load
LP-NPK-VD-042	ZACA 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	-2.71%	-16.41%		Monitor voltage deviation/drop load
LP-NPK-VD-043	BUELLTON 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C3	L-1-1	-3.4%	-19.1%		Monitor voltage deviation/drop load
LP-NPK-VD-044	CABRILLO 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C3	L-1-1	-4.1%	-23.0%		Monitor voltage deviation/drop load
LP-NPK-VD-045	DIVIDE 70 kV	Mesa-Divide #1 and #2 115 kV Lines	C3	L-1-1	-5.2%	-28.1%		Monitor voltage deviation/drop load
LP-NPK-VD-046	DIVVIDE 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C3	L-1-1	-4.9%	-26.6%		Monitor voltage deviation/drop load
LP-NPK-VD-047	FAIRWAY 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C3	L-1-1	-1.5%	-15.2%		Monitor voltage deviation/drop load
LP-NPK-VD-048	GAREY 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C3	L-1-1	-1.5%	-15.2%		Monitor voltage deviation/drop load
LP-NPK-VD-049	LMPC-CTY 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C3	L-1-1	-4.0%	-27.0%		Monitor voltage deviation/drop load

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Study Area: **PG&E Los Padres - Summer Light Load & Summer Off-Peak**



Voltage Deviations

ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2014 Summer Light Load	2017 Summer Off-Peak	N/A	
LP-NPK-VD-050	MANVILLE 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C3	L-1-1	-3.8%	-27.1%		Monitor voltage deviation/drop load
LP-NPK-VD-051	MESA PGE 230 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C3	L-1-1	-1.2%	-16.0%		Monitor voltage deviation/drop load
LP-NPK-VD-052	OCEANO 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C3	L-1-1	-0.8%	-11.1%		Monitor voltage deviation/drop load
LP-NPK-VD-053	PALMR 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C3	L-1-1	-1.5%	-15.3%		Monitor voltage deviation/drop load
LP-NPK-VD-054	PURISIMA 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C3	L-1-1	-4.2%	-27.0%		Monitor voltage deviation/drop load
LP-NPK-VD-055	RPSP1013 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C3	L-1-1	-3.1%	-27.1%		Monitor voltage deviation/drop load
LP-NPK-VD-056	S.M.ASSO 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C3	L-1-1	-1.4%	-15.5%		Monitor voltage deviation/drop load
LP-NPK-VD-057	SISQUOC 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C3	L-1-1	-1.5%	-15.2%		Monitor voltage deviation/drop load
LP-NPK-VD-058	SNTA MRA 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C3	L-1-1	-1.6%	-14.7%		Monitor voltage deviation/drop load
LP-NPK-VD-059	SNTA YNZ 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C3	L-1-1	-3.4%	-19.1%		Monitor voltage deviation/drop load
LP-NPK-VD-060	SURF 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C3	L-1-1	-4.3%	-23.7%		Monitor voltage deviation/drop load
LP-NPK-VD-061	TEMPLETN 230 kV	Templeton-Gates 230 kV Line and Morro Bay-Templeton 230 kV Line	C3	L-1-1	-4.8%	-17.6%		Existing Paso Robles SPS may operate
LP-NPK-VD-062	UNION OL 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C3	L-1-1	-1.0%	-12.5%		Monitor voltage deviation/drop load
LP-NPK-VD-063	VAFB SSA 70 kV	Mesa-Divide #1 and #2 115 kV Lines	C3	L-1-1	-5.3%	-28.7%		Monitor voltage deviation/drop load
LP-NPK-VD-064	VAFB SSB 70 kV	Mesa-Divide #1 and #2 115 kV Lines	C3	L-1-1	-5.2%	-28.3%		Monitor voltage deviation/drop load

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Study Area: **PG&E Los Padres - Summer Light Load & Summer Off-Peak**



Voltage Deviations

ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2014 Summer Light Load	2017 Summer Off-Peak	N/A	
LP-NPK-VD-065	ZACA 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C3	L-1-1	-2.7%	-16.4%		Monitor voltage deviation/drop load

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Study Area: **PG&E Los Padres - Summer Peak**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-LV-001	BUELLTON 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-002	DIVIDE 70 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-003	DIVVIDE 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-004	FAIRWAY 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-005	GAREY 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-006	LMPC-CTY 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-007	MANVILLE 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-008	MESA PGE 230 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-009	OCEANO 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-010	PALMR 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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Study Area: **PG&E Los Padres - Summer Peak**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-LV-011	PURISIMA 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-012	S.M.ASSO 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-013	SISQUOC 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-014	SNTA MRA 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-015	SNTA YNZ 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-016	SURF 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-017	UNION OL 115 kV	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-018	VAFB SSA 70 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-019	VAFB SSB 70 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-020	ZACA 115 kV	Mesa-Divide #1 and #2 115 kV Lines	C5-DCTL	L-2	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-021	BUELLTON 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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Study Area: **PG&E Los Padres - Summer Peak**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-LV-022	BUELLTON 115 kV	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-023	BUELLTON 115 kV	Morro Bay-Diablo 230 kV Line and Morro Bay-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-024	BUELLTON 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-025	CABRILLO 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-026	CABRILLO 115 kV	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-027	CABRILLO 115 kV	Morro Bay-Diablo 230 kV Line and Morro Bay-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-028	CABRILLO 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-029	DIVIDE 70 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-030	DIVIDE 70 kV	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-031	DIVIDE 70 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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Study Area: **PG&E Los Padres - Summer Peak**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-LV-032	DIVVIDE 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-033	DIVVIDE 115 kV	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-034	DIVVIDE 115 kV	Morro Bay-Diablo 230 kV Line and Morro Bay-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-035	DIVVIDE 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-036	FAIRWAY 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-037	FAIRWAY 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-038	GAREY 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-039	GAREY 115 kV	Mesa-Sisquoc 115 kV Line and Santa Maria-Sisquoc 115 kV Line	C3	L-1-1	0.918	0.914	0.893	Monitor voltage/drop load
LP-S-LV-040	GAREY 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-041	LMPC-CTY 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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Study Area: **PG&E Los Padres - Summer Peak**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-LV-042	LMPC-CTY 115 kV	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-043	LMPC-CTY 115 kV	Morro Bay-Diablo 230 kV Line and Morro Bay-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-044	LMPC-CTY 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-045	MANVILLE 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-046	MANVILLE 115 kV	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-047	MANVILLE 115 kV	Morro Bay-Diablo 230 kV Line and Morro Bay-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-048	MANVILLE 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-049	MESA PGE 230 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-050	MESA_PGE 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-051	MESA_PGE 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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Study Area: **PG&E Los Padres - Summer Peak**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-LV-052	OCEANO 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-053	OCEANO 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-054	PALMR 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-055	PALMR 115 kV	Mesa-Sisquoc 115 kV Line and Santa Maria-Sisquoc 115 kV Line	C3	L-1-1	0.922	0.917	0.896	Monitor voltage/drop load
LP-S-LV-056	PALMR 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-057	PURISIMA 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-058	PURISIMA 115 kV	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-059	PURISIMA 115 kV	Morro Bay-Diablo 230 kV Line and Morro Bay-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-060	PURISIMA 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-061	RPSP1013 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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Study Area: **PG&E Los Padres - Summer Peak**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-LV-062	RPSP1013 115 kV	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-063	RPSP1013 115 kV	Morro Bay-Diablo 230 kV Line and Morro Bay-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-064	RPSP1013 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-065	S.M.ASSO 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-066	S.M.ASSO 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-067	SISQUOC 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-068	SISQUOC 115 kV	Mesa-Sisquoc 115 kV Line and Santa Maria-Sisquoc 115 kV Line	C3	L-1-1	0.919	0.914	0.893	Monitor voltage/drop load
LP-S-LV-069	SISQUOC 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-070	SNTA MRA 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-071	SNTA MRA 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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Study Area: **PG&E Los Padres - Summer Peak**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-LV-072	SNTA YNZ 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-073	SNTA YNZ 115 kV	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-074	SNTA YNZ 115 kV	Morro Bay-Diablo 230 kV Line and Morro Bay-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-075	SNTA YNZ 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-076	SURF 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-077	SURF 115 kV	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-078	SURF 115 kV	Morro Bay-Diablo 230 kV Line and Morro Bay-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-079	SURF 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-080	TEMPLETN 230 kV	Templeton-Gates 230 kV Line and Morro Bay-Templeton 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-081	UNION OL 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

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Study Area: **PG&E Los Padres - Summer Peak**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-LV-082	UNION OL 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-083	VAFB A-N 70 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-084	VAFB A-N 70 kV	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-085	VAFB A-N 70 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-086	VAFB SSA 70 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-087	VAFB SSA 70 kV	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-088	VAFB SSA 70 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-089	VAFB SSB 70 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-090	VAFB SSB 70 kV	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-091	VAFB SSB 70 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

2012/2013 ISO Reliability Assessment - Preliminary Study Results

Study Area: **PG&E Los Padres - Summer Peak**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2014 Summer Peak	2017 Summer Peak	2022 Summer Peak	
LP-S-LV-092	ZACA 115 kV	Mesa 230/115 Bank #2 & 3	C3	T-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-093	ZACA 115 kV	Mesa-Divide 115 kV #1 & 2 Lines	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-094	ZACA 115 kV	Morro Bay-Diablo 230 kV Line and Morro Bay-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line
LP-S-LV-095	ZACA 115 kV	Morro Bay-Mesa 230 kV Line and Diablo-Mesa 230 kV Line	C3	L-1-1	Diverged	Diverged	Diverged	Drop load/provide another source by closing idle Midway-Santa Maria 115 kV Line. Convert to 230 kV line

2012/2013 ISO Reliability Assessment - Preliminary Study Results

Study Area: **PG&E Los Padres - Summer Light Load & Summer Off-Peak**



High/Low Voltage

ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2014 Summer Light Load	2017 Summer Off-Peak	N/A	
LP-NPK_LV-001	ATASCDRO 70 kV	-	A	Normal	1.053	1.02		Under consideration for possible review
LP-NPK_LV-002	CAYUCOS 70 kV	-	A	Normal	1.054	1.03		Under consideration for possible review
LP-NPK_LV-003	PERRY 70 kV	-	A	Normal	1.053	1.03		Under consideration for possible review
LP-NPK_LV-004	CAMBRIA 70 kV	-	A	Normal	1.052	1.03		Under consideration for possible review
LP-NPK_LV-005	BAYWOOD 70 kV	-	A	Normal	1.056	1.03		Under consideration for possible review
LP-NPK_LV-006	MUSTANG 70 kV	-	A	Normal	1.058	1.02		Under consideration for possible review
LP-NPK_LV-007	SN LS OB 70 kV	-	A	Normal	1.064	1.03		Under consideration for possible review
LP-NPK_LV-008	DIVIDE 70 kV	-	A	Normal	1.090	1.03		Under consideration for possible review
LP-NPK_LV-009	VAFB SSA 70 kV	-	A	Normal	1.078	1.02		Under consideration for possible review
LP-NPK_LV-010	VAFB SSB 70 kV	-	A	Normal	1.089	1.03		Under consideration for possible review
LP-NPK_LV-011	VAFB SSB 70 kV	Divide 115/70 Bank #2	B	T-1	1.101	1.04		Under consideration for possible review
LP-NPK_LV-012	DIVIDE 70 kV	Divide 115/70 Bank #2	B	T-1	1.102	1.04		Under consideration for possible review

2012/2013 ISO Reliability Assessment - Preliminary Study Results

Study Area: **PG&E Los Padres**

Single Contingency Load Drop



ID	Worst Contingency	Category	Category Description	Amount of Load Drop (MW)			Potential Mitigation Solutions
				2014	2017	2022	

No single contingency resulted in total load drop of more than 250 MW.

2012/2013 ISO Reliability Assessment - Preliminary Study Results

Study Area: **PG&E Los Padres**



Single Source Substation with more than 100 MW Load

ID	Substation	Load Served (MW)			Potential Mitigation Solutions
		2014	2017	Select..	

No single source substation with more than 100 MW Load