Study Area: PG&E Los Padres

Thermal Overloads

ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Summer Light Load	N/A	N/A	N/A	
LP-T-1	36354 SAN MIGL 70.0 34574 COLNGA 1 70.0 1	P1-3:A20:1:_Templeton 230/70 kV Transformer	P1	N-1	Diverged	<100	<100	251.98	<100				Estrella 230 kV Substation Project
LP-T-2	36254 SN LS OB 115 34796 CARRIZO 115 1	P2-4:A20:2:_MORRO BAY 230 kV CB 622	P2	Circuit Breaker	117.82	<100	<100	<100	<100				Mitigation under review. Action Plan/Bus reconfiguration
LP-T-3	36354 SAN MIGL 70.0 34574 COLNGA 1 70.0 1	P2-1:A20:36:_TEMPL J-PSA RBLS #1 70 kV	P2-1	Open Line w/ no Fault	Diverged	<100	<100	<100	<100				Estrella 230 kV Substation Project
LP-T-4	36251 FTHILTP2 115 36254 SN LS OB 115 1	P1-2:A20:15:_Morro Bay-Diablo 230 kV and P1-2:A20:16:_Morro Bay-Mesa 230 kV	P6	N-1-1	Diverged	<100	<100	<100	<100				Modify Santa Maria SPS/UVLS in the interim until Midway-Andrew 230 kV Project in service in 2019
LP-T-5	36252 MORRO BY 115 30915 MORROBAY 230 6	P1-2:A20:15:_Morro Bay-Diablo 230 kV and P1-2:A20:16:_Morro Bay-Mesa 230 kV	P6	N-1-1	Diverged	<100	<100	<100	<100				Action Plan until Morro Bay Transformer Addition is in service
LP-T-6	36252 MORRO BY 115 36303 GLDTRJC1 115 1	P1-2:A20:15:_Morro Bay-Diablo 230 kV and P1-2:A20:16:_Morro Bay-Mesa 230 kV	P6	N-1-1	Diverged	<100	<100	<100	<100				Estrella 230 kV Substation Project/Modify Santa Maria SPS/UVLS in the interim until Midway-Andrew 230 kV Project in service in 2019
LP-T-7	36252 MORRO BY 115 36304 GLDTRJC2 115 1	P1-2:A20:15:_Morro Bay-Diablo 230 kV and P1-2:A20:16:_Morro Bay-Mesa 230 kV	P6	N-1-1	Diverged	<100	<100	<100	<100				Estrella 230 kV Substation Project/Modify Santa Maria SPS/UVLS in the interim until Midway-Andrew 230 kV Project in service in 2019
LP-T-8	36253 FTHILTP1 115 36254 SN LS OB 115 1	P1-2:A20:15:_Morro Bay-Diablo 230 kV and P1-2:A20:16:_Morro Bay-Mesa 230 kV	P6	N-1-1	Diverged	<100	<100	<100	<100				Estrella 230 kV Substation Project/Modify Santa Maria SPS/UVLS in the interim until Midway-Andrew 230 kV Project in service in 2019
LP-T-9	36254 SN LS OB 115 34796 CARRIZO 115 1	P1-2:A20:17:_Diablo-Mesa 230 kV and P1-2:A20:16:_Morro Bay-Mesa 230 kV	P6	N-1-1	Diverged	<100	<100	<100	<100				Action Plan. Modify Santa Maria SPS/UVLS in the interim until Midway-Andrew 230 kV Project in service in 2019/Estrella 230 kV Substation Project
LP-T-10	36254 SN LS OB 115 36266 SNTA MRA 115 1	P1-2:A20:15:_Morro Bay-Diablo 230 kV and P1-2:A20:16:_Morro Bay-Mesa 230 kV	P6	N-1-1	Diverged	<100	<100	108.33	<100				Mesa and Santa Maria SPS/Estrella 230 kV Substation Project/Modify Santa Maria SPS/UVLS in the interim until Midway-Andrew 230 kV Project in service in 2019

Study Area: PG&E Los Padres

Thermal Overloads

ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Summer Light Load	N/A	N/A	N/A	
LP-T-11	36254 SN LS OB 115 36278 OCEANO 115 1	P1-2:A20:15:_Morro Bay-Diablo 230 kV and P1-2:A20:16:_Morro Bay-Mesa 230 kV	P6	N-1-1	Diverged	<100	<100	<100	<100				Mesa and Santa Maria SPS/Estrella 230 kV Substation Project/Modify Santa Maria SPS/UVLS in the interim until Midway-Andrew 230 kV Project in service in 2019
LP-T-12	36256 MESA_PGE 115 36280 UNION OL 115 1	P1-2:A20:15:_Morro Bay-Diablo 230 kV and P1-2:A20:16:_Morro Bay-Mesa 230 kV	P6	N-1-1	Diverged	<100	<100	<100	<100				Mesa and Santa Maria SPS/Estrella 230 kV Substation Project/Modify Santa Maria SPS/UVLS in the interim until Midway-Andrew 230 kV Project in service in 2019
LP-T-13	36260 SISQUOC 115 36286 PALMR 115 1	P1-2:A20:25:_Mesa-Divide 115 kV #1 and P1-2:A20:26:_Mesa-Divide 115 kV #2	P6	N-1-1	148.70	<100	<100	<100	<100				Divide and Mesa SPS/ Midway-Andrew 230 kV Project
LP-T-14	36264 S.YNZ JT 115 36288 ZACA 115 1	P1-2:A20:25:_Mesa-Divide 115 kV #1 and P1-2:A20:26:_Mesa-Divide 115 kV #2	P6	N-1-1	138.58	<100	<100	<100	<100				Divide and Mesa SPS/ Midway-Andrew 230 kV Project
LP-T-15	36278 OCEANO 115 36280 UNION OL 115 1	P1-2:A20:15:_Morro Bay-Diablo 230 kV and P1-2:A20:16:_Morro Bay-Mesa 230 kV	P6	N-1-1	Diverged	<100	<100	<100	<100				Estrella 230 kV Substation Project
LP-T-16	36286 PALMR 115 36287 AECCEORTP 115 1	P1-2:A20:25:_Mesa-Divide 115 kV #1 and P1-2:A20:26:_Mesa-Divide 115 kV #2	P6	N-1-1	140.71	<100	<100	<100	<100				Divide and Mesa SPS/ Midway-Andrew 230 kV Project
LP-T-17	36287 AECCEORTP 115 36288 ZACA 115 1	P1-2:A20:25:_Mesa-Divide 115 kV #1 and P1-2:A20:26:_Mesa-Divide 115 kV #2	P6	N-1-1	125.56	<100	<100	<100	<100				Divide and Mesa SPS/ Midway-Andrew 230 kV Project
LP-T-18	36303 GLDTRJC1 115 36251 FTHILTP2 115 1	P1-2:A20:15:_Morro Bay-Diablo 230 kV and P1-2:A20:16:_Morro Bay-Mesa 230 kV	P6	N-1-1	Diverged	<100	<100	<100	<100				Estrella 230 kV Substation Project/Modify Santa Maria SPS/UVLS in the interim until Midway-Andrew 230 kV Project in service in 2019
LP-T-19	36304 GLDTRJC2 115 36253 FTHILTP1 115 1	P1-2:A20:15:_Morro Bay-Diablo 230 kV and P1-2:A20:16:_Morro Bay-Mesa 230 kV	P6	N-1-1	Diverged	<100	<100	<100	<100				Estrella 230 kV Substation Project/Modify Santa Maria SPS/UVLS in the interim until Midway-Andrew 230 kV Project in service in 2019
LP-T-20	36354 SAN MIGL 70.0 34574 COLNGA 1 70.0 1	P1-2:A14:13:_Templeton-Gates 230 kV and P1-3:A20:1:_Templeton 230/70 kV Transformer	P6	N-1-1	Diverged	<100	<100	251.93	<100				Estrella 230 kV Substation Project
LP-T-21	36354 SAN MIGL 70.0 36356 PSA RBLS 70.0 1	P1-2:A14:13:_Templeton-Gates 230 kV and P1-3:A20:1:_Templeton 230/70 kV Transformer	P6	N-1-1	Diverged	<100	<100	174.27	<100				Estrella 230 kV Substation Project

Study Area: PG&E Los Padres

Thermal Overloads

ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Summer Light Load	N/A	N/A	N/A	
LP-T-22	36372 MUSTNG J 70.0 36376 SN LS OB 70.0 1	P1-2:A14:13:_Templeton-Gates 230 kV and P1-2:A20:14:_Morro Bay-Templeton 230 kV	P6	N-1-1	Diverged	<100	<100	<100	<100				Action Plan. Cayucos Capacitor Project (rerate the line section)
LP-T-23	36254 SN LS OB 115 34796 CARRIZO 115 1	P7-1:A20:17:_Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	P7	DCTL	Diverged	<100	<100	<100	<100				Action Plan. Modify Santa Maria SPS/UVLS in the interim until Midway-Andrew 230 kV Project in service in 2019/Estrella 230 kV Substation Project
LP-T-24	36354 SAN MIGL 70.0 34574 COLNGA 1 70.0 1	P7-1:A20:2:_Templeton-Atascadero & Templeton-Paso Robles 70 kV Lines	P7	DCTL	Diverged	<100	<100	252.17	<100				Estrella 230 kV Substation Project

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

Voltage Deviations

ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Summer Light Load	N/A	N/A	N/A	
X-VD-1													

No voltage deviations identified.

ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Summer Light Load	N/A	N/A	N/A	
LP-V-1	ATASCDRO 70 kV	P1-2:A20:36:_Templeton-Atascadero 70 kV and P1-2:A20:41:_Atascadero-San Luis Obispo 70 kV	P6	N-1-1	0.89	>0.90	>0.90	>0.90	>0.90				Action Plan. Estrella 230 kV Project/ Cayucos Project
LP-V-2	BUELLTON 115 kV	P1-2:A20:25:_Mesa-Divide 115 kV #1 and P1-2:A20:26:_Mesa-Divide 115 kV #2	P6	N-1-1	0.90	>0.90	>0.90	>0.90	>0.90				Action Plan/Divide SPS. Midway-Andrew 230 kV Project
LP-V-3	CABRILLO 115 kV	P1-2:A20:25:_Mesa-Divide 115 kV #1 and P1-2:A20:26:_Mesa-Divide 115 kV #2	P6	N-1-1	0.86	>0.90	>0.90	>0.90	>0.90				Action Plan/Divide SPS. Midway-Andrew 230 kV Project
LP-V-4	DIVIDE 70 kV	P1-2:A20:25:_Mesa-Divide 115 kV #1 and P1-2:A20:26:_Mesa-Divide 115 kV #2	P6	N-1-1	0.87	>0.90	>0.90	>0.90	>0.90				Action Plan/Divide SPS. Midway-Andrew 230 kV Project
LP-V-5	DIVIDE 70 kV	P1-4:A20:2:_DIABLOCN 230.00 SVD ID v2 and P1-3:A20:7:_Divide 115/70 Transformer #2	P6	N-1-1	>0.90	>0.90	>0.90	>0.90	1.10				Mitigation under investigation
LP-V-6	ESTRELLA 70 kV	P1-3:A20:13:_Estrella 230/70 kV Transformer and P1-3:A20:1:_Templeton 230/70 kV Transformer	P6	N-1-1	>0.90	>0.90	>0.90	>0.90	0.82				Monitor voltage. Midway-Andrew 230 kV Project
LP-V-7	MANVILLE 115 kV	P1-2:A20:25:_Mesa-Divide 115 kV #1 and P1-2:A20:26:_Mesa-Divide 115 kV #2	P6	N-1-1	0.81	>0.90	>0.90	>0.90	>0.90				Action Plan/Divide SPS. Midway-Andrew 230 kV Project
LP-V-8	OCEANO 115 kV	P1-2:A20:27:_Callender Sw. Sta-Mesa 115 kV and P1-3:A20:2:_Morro Bay 230/115 Transformer #6	P6	N-1-1	0.89	>0.90	>0.90	>0.90	>0.90				Action Plan. Estrella 230 kV Project/ Cayucos Project
LP-V-9	PSA RBLS 70 kV	P1-2:A14:13:_Templeton-Gates 230 kV and P1-2:A20:14:_Morro Bay-Templeton 230 kV	P6	N-1-1	>0.90	>0.90	>0.90	0.88	>0.90				Action Plan. Estrella 230 kV Project/ Cayucos Project
LP-V-10	PSA RBLS 70 kV	P1-3:A20:13:_Estrella 230/70 kV Transformer and P1-3:A20:1:_Templeton 230/70 kV Transformer	P6	N-1-1	>0.90	>0.90	>0.90	>0.90	0.822				Monitor voltage. Estrella 230 kV Project/ Cayucos Project
LP-V-11	PURISIMA 115 kV	P1-2:A20:25:_Mesa-Divide 115 kV #1 and P1-2:A20:26:_Mesa-Divide 115 kV #2	P6	N-1-1	0.82	>0.90	>0.90	>0.90	>0.90				Action Plan/Divide SPS. Midway-Andrew 230 kV Project
LP-V-12	SAN MIGL 70 kV	P1-2:A14:13:_Templeton-Gates 230 kV and P1-2:A20:14:_Morro Bay-Templeton 230 kV	P6	N-1-1	>0.90	>0.90	>0.90	0.89	>0.90				Action Plan. Estrella 230 kV Project/ Cayucos Project
LP-V-13	SAN MIGL 70 kV	P1-3:A20:13:_Estrella 230/70 kV Transformer and P1-3:A20:1:_Templeton 230/70 kV Transformer	P6	N-1-1	>0.90	>0.90	>0.90	>0.90	0.83				Monitor voltage. Estrella 230 kV Project/ Cayucos Project
LP-V-14	SNTA YNZ 115 kV	P1-2:A20:25:_Mesa-Divide 115 kV #1 and P1-2:A20:26:_Mesa-Divide 115 kV #2	P6	N-1-1	0.89	>0.90	>0.90	>0.90	>0.90				Action Plan/Divide SPS. Midway-Andrew 230 kV Project
LP-V-15	SURF 115 kV	P1-2:A20:25:_Mesa-Divide 115 kV #1 and P1-2:A20:26:_Mesa-Divide 115 kV #2	P6	N-1-1	0.85	>0.90	>0.90	>0.90	>0.90				Action Plan/Divide SPS. Midway-Andrew 230 kV Project
LP-V-16	TEMPLETN 230 kV	P1-2:A14:18:_Templeton-Gates 230 kV and P1-2:A20:19:_Morro Bay-Templeton 230 kV	P6	N-1-1	>0.90	0.81	0.81	0.75	>0.90				Mitigation under review. Estrella 230 kV Project/ Cayucos Project

ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Summer Light Load	N/A	N/A	N/A	
LP-V-17	UNION OL 115 kV	P1-2:A20:27:_Callender Sw. Sta-Mesa 115 kV and P1-3:A20:2:_Morro Bay 230/115 Transformer #6	P6	N-1-1	0.885	>0.90	>0.90	>0.90	>0.90				Action Plan. Estrella 230 kV Project/ Cayucos Project
LP-V-18	VAFB SSA 70 kV	P1-2:A20:25:_Mesa-Divide 115 kV #1 and P1-2:A20:26:_Mesa-Divide 115 kV #2	P6	N-1-1	0.8712	>0.90	>0.90	>0.90	>0.90				Action Plan/Divide SPS. Midway-Andrew 230 kV Project
LP-V-19	VAFB SSB 70 kV	P1-2:A20:25:_Mesa-Divide 115 kV #1 and P1-2:A20:26:_Mesa-Divide 115 kV #2	P6	N-1-1	0.8759	>0.90	>0.90	>0.90	>0.90				Action Plan/Divide SPS. Midway-Andrew 230 kV Project

Study Area: PG&E Los Padres

Transient Stability

ID	Contingency	Category	Category Description	Transient Stability Performance								Potential Mitigation Solutions
				2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Summer Light Load	N/A	N/A	N/A	
X-TS-1												

2015-2016 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
				Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	
X-SLD-1												

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

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

Single Source Substation with more than 100 MW Load

ID	Substation	Load Served (MW)								Potential Mitigation Solutions
		Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	
X-SS-1										

No single source substation with more than 100 MW Load