

2014-2015 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
					2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	
LP-SP-T-01	SAN MIGL-COLNGA 1 70 kV #1 Line	Templeton 230/70 kV #1 Bank	B	T-1	Diverge	<100	<100	Estrella Porproject
LP-SP-T-02	SN LS OB-CARRIZO 115 kV #1 Line	MORRO BAY 230 kV CB 612	C2	CB	Diverge	<100	<100	Estrella Porproject
LP-SP-T-03	SAN MIGL-COLNGA 1 70 kV #1 Line	Estrella 230/70 kV & Templeton 230/70 kV Bank	C3	T-1-1	<100	210	216	Install SPS to trip Q877 as part of the Estrella Project
LP-SP-T-04	SAN MIGL-ESTRELLA 70 kV #1 Line	Estrella 230/70 kV & Templeton 230/70 kV Bank	C3	T-1-1	<100	181	185	Install SPS to trip Q877 as part of the Estrella Project
LP-SP-T-05	ESTRELLA-PSA RBLs 70 kV #1 Line	Morro Bay-Templeton & Templeton-Gates 230 kV	C3	L-1-1	<100	109	108	Install SPS to trip Q877 as part of the Estrella Project
LP-SP-T-06	MORRO BY 115/230 kV #6 Bank	Mesa 230/115 kV Bank #2 & #3	C3	T-1-1	146	<100	<100	Drop load until the Morro Bay Transformer Addition Project is in service
LP-SP-T-07	SAN MIGL-COLNGA 1 70 kV #1 Line	Morro Bay-Templeton & Templeton-Gates 230 kV	C3	L-1-1	229	<100	<100	Mitigated by the Estrella Project
LP-SP-T-08	SAN MIGL-PSA RBLs 70 kV #1 Line	Templeton-Gates 230 kV Line & Templeton 230/70 kV	C3	L-1/T-1	175	<100	<100	Mitigated by the Estrella Project
LP-SP-T-09	TEMPL7-TEMPL J2 70 kV #1 Line	Morro Bay-Templeton & Templeton-Gates 230 kV	C3	L-1-1	138	<100	<100	Mitigated by the Estrella Project
LP-SP-T-10	TEMPL J2-ATASCDRO 70 kV #1 Line	Morro Bay-Templeton & Templeton-Gates 230 kV	C3	L-1-1	132	<100	<100	Mitigated by the Estrella Project
LP-SP-T-11	ATASCDRO-SN LS OB 70 kV #1 Line	Morro Bay-Templeton & Templeton-Gates 230 kV	C3	L-1-1	171	<100	<100	Mitigated by the Estrella Project
LP-SP-T-12	ATASCDRO-CACOS J2 70 kV #1 Line	Morro Bay-Templeton & Templeton-Gates 230 kV	C3	L-1-1	126	<100	<100	Mitigated by the Estrella Project
LP-SP-T-13	CACOS J2-CAYUCOS 70 kV #1 Line	Morro Bay-Templeton & Templeton-Gates 230 kV	C3	L-1-1	131	<100	<100	Mitigated by the Estrella Project
LP-SP-T-14	MUSTNG J-SN LS OB 70 kV #1 Line	Morro Bay-Templeton & Templeton-Gates 230 kV	C3	L-1-1	153	<100	<100	Mitigated by the Estrella Project
LP-SP-T-15	MORRO BY-GLDTRJC1 115 kV #1 Line	Morro Bay-Mesa & Diablo-Mesa 230 kV Lines	C3	L-1-1	137	149	<100	Modify Santa Maria /Mesa SPS/UVLS in the interim until Midway-Andrew 230 kV Project is in place
LP-SP-T-16	GLDTRJC1-FTHILTP2 115 kV #1 Line	Morro Bay-Mesa & Diablo-Mesa 230 kV Lines	C3	L-1-1	124	138	<100	Modify Santa Maria /Mesa SPS/UVLS in the interim until Midway-Andrew 230 kV Project is in place

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LP-SP-T-17	FTHILTP2-SN LS OB 115 kV #1 Line	Morro Bay-Mesa & Diablo-Mesa 230 kV Lines	C3	L-1-1	125	139	<100	Modify Santa Maria /Mesa SPS/UVLS in the interim until Midway-Andrew 230 kV Project is in place
LP-SP-T-18	MORRO BY-GLDTRJC2 115 kV #1 Line	Morro Bay-Mesa & Diablo-Mesa 230 kV Lines	C3	L-1-1	133	146	<100	Modify Santa Maria /Mesa SPS/UVLS in the interim until Midway-Andrew 230 kV Project is in place
LP-SP-T-19	GLDTRJC2-FTHILTP1 115 kV #1 Line	Mesa 230/115 kV Bank #2 & #3	C3	T-1-1	133	145	<100	Modify Santa Maria /Mesa SPS/UVLS in the interim until Midway-Andrew 230 kV Project is in place
LP-SP-T-20	FTHILTP1-SN LS OB 115 kV #1 Line	Morro Bay-Mesa & Diablo-Mesa 230 kV Lines	C3	L-1-1	128	141	<100	Modify Santa Maria /Mesa SPS/UVLS in the interim until Midway-Andrew 230 kV Project is in place
LP-SP-T-21	SN LS OB-CARRIZO 115 kV #1 Line	Morro Bay-Mesa & Morro Bay-Diablo 230 kV Lines	C3	L-1-1	139	130	<100	Modify Santa Maria /Mesa SPS/UVLS in the interim until Midway-Andrew 230 kV Project is in place
LP-SP-T-22	SN LS OB-SNTA MRA 115 kV #1 Line	Morro Bay-Mesa & Diablo-Mesa 230 kV Lines	C3	L-1-1	276	307	<100	Modify Santa Maria /Mesa SPS/UVLS in the interim until Midway-Andrew 230 kV Project is in place
LP-SP-T-23	SNTA MRA-FRWAYTP 115 kV #1 Line	Mesa-Divide 115 kV #1 & #2 Lines	C3	L-1-1	117	114	<100	Modify Santa Maria /Mesa SPS/UVLS in the interim until Midway-Andrew 230 kV Project is in place

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LP-SP-T-24	SNTAMRTP-FAIRWAY 115 kV #1 Line	Mesa 230/115 kV Bank #2 & #3	C3	T-1-1		101	<100	Modify Santa Maria /Mesa SPS/UVLS in the interim until Midway-Andrew 230 kV Project is in place
LP-SP-T-25	SN LS OB-OCEANO 115 kV #1 Line	Morro Bay-Diablo & Diablo-Mesa 230 kV Lines	C3	L-1-1	228	250	<100	Modify Santa Maria /Mesa SPS/UVLS in the interim until Midway-Andrew 230 kV Project is in place
LP-SP-T-26	OCEANO-UNION OL 115 kV #1 Line	Morro Bay-Mesa & Diablo-Mesa 230 kV Lines	C3	L-1-1	181	201	<100	Modify Santa Maria /Mesa SPS/UVLS in the interim until Midway-Andrew 230 kV Project is in place
LP-SP-T-27	MESA_PGE-UNION OL 115 kV #1 Line	Morro Bay-Mesa & Diablo-Mesa 230 kV Lines	C3	L-1-1	181	193	<100	Modify Santa Maria /Mesa SPS/UVLS in the interim until Midway-Andrew 230 kV Project is in place
LP-SP-T-28	MESA_PGE-S.M.ASSO 115 kV #1 Line	Mesa-Divide 115 kV #1 & #2 Lines	C3	L-1-1	140	<100	<100	Modify Santa Maria /Mesa SPS/UVLS in the interim until Midway-Andrew 230 kV Project is in place
LP-SP-T-29	S.M.ASSO-SISQUOC 115 kV #1 Line	Mesa-Divide 115 kV #1 & #2 Lines	C3	L-1-1	140	<100	<100	Mitigated by the Midway-Andrew 230 kV Project
LP-SP-T-30	SISQUOC-PALMR 115 kV #1 Line	Mesa-Divide 115 kV #1 & #2 Lines	C3	L-1-1	302	286	<100	Mitigated by the Midway-Andrew 230 kV Project
LP-SP-T-31	PALMR-ZACA 115 kV #1 Line	Mesa-Divide 115 kV #1 & #2 Lines	C3	L-1-1	298	282	<100	Mitigated by the Midway-Andrew 230 kV Project
LP-SP-T-32	S.YNZ JT-ZACA 115 kV #1 Line	Mesa-Divide 115 kV #1 & #2 Lines	C3	L-1-1	334	317	<100	Mitigated by the Midway-Andrew 230 kV Project

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ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)			Potential Mitigation Solutions
					2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	
LP-SP-T-33	S.YNZ JT-CABRILLO 115 kV #1 Line	Mesa-Divide 115 kV #1 & #2 Lines	C3	L-1-1	120	114	<100	Mitigated by the Midway-Andrew 230 kV Project
LP-SP-T-34	LOMPCJ1-CABRILLO 115 kV #1 Line	Mesa-Divide 115 kV #1 & #2 Lines	C3	L-1-1	110	104	<100	Mitigated by the Midway-Andrew 230 kV Project
LP-SP-T-35	SURF JCT-LOMPCJ1 115 kV #1 Line	Mesa-Divide 115 kV #1 & #2 Lines	C3	L-1-1	110	104	<100	Mitigated by the Midway-Andrew 230 kV Project
LP-SP-T-36	SN LS OB-CARRIZO 115 kV #1 Line	Morro Bay-Mesa and Morro Bay-Diablo 230 kV L	C5	L-1-1	135	125	<100	Mitigated by the Midway-Andrew 230 kV Project

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

Thermal Overloads



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)			Potential Mitigation Solutions
					2016 Summer Off-Peak	2019 Summer Light Load	N/A	
LP-NPK-T-01	SAN MIGL-COLNGA 1 70 kV #1 Line	Paso Robles-Templeton 70 kV Line	B	L-1	115	<100	N/A	Install SPS to trip Q877 as part of the Estrella Project
LP-NPK-T-02	SN LS OB-SNTA MRA 115 kV #1 Line	Morro Bay-Diablo & Morro Bay-Mesa 230 kV Lin	C3	L-1-1	112	105	N/A	Install SPS to trip Q877 as part of the Estrella Project
LP-NPK-T-03	SISQUOC-PALMR 115 kV #1 Line	Mesa-Divide 115 kV #1 & #2 Lines	C3	L-1-1	116	108	N/A	Apply Mesa/Santa Maria SPS until the Midway-Andrew 230 kV Project is in service
LP-NPK-T-04	PALMR-ZACA 115 kV #1 Line	Mesa-Divide 115 kV #1 & #2 Lines	C3	L-1-1	114	107	N/A	Apply Mesa/Santa Maria SPS until the Midway-Andrew 230 kV Project is in service
LP-NPK-T-05	S.YNZ JT-ZACA 115 kV #1 Line	Mesa-Divide 115 kV #1 & #2 Lines	C3	L-1-1	129	121	N/A	Apply Mesa/Santa Maria SPS until the Midway-Andrew 230 kV Project is in service

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	

No voltage deviation concerns identified.

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2016 Summer Off-Peak	2019 Summer Light Load	N/A	

No voltage deviation concerns identified.



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	

No high/low voltage concerns identified.

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

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2016 Summer Off-Peak	2019 Summer Light Load	N/A	

No high/low voltage concerns identified.

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Single Contingency Load Drop

ID	Worst Contingency	Category	Category Description	Amount of Load Drop (MW)			Potential Mitigation Solutions
				2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	

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

Single Contingency Load Drop

ID	Worst Contingency	Category	Category Description	Amount of Load Drop (MW)			Potential Mitigation Solutions
				2016 Summer Off-Peak	2019 Summer Light Load	N/A	

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

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Single Source Substation with more than 100 MW Load



ID	Substation	Load Served (MW)			Potential Mitigation Solutions
		2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	

No single source substation with more than 100 MW Load

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

Single Source Substation with more than 100 MW Load



ID	Substation	Load Served (MW)			Potential Mitigation Solutions
		2016 Summer Off-Peak	2019 Summer Light Load	N/A	

No single source substation with more than 100 MW Load