Study Area: San Diego Area - 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	
SD-SP-T-1	22464 MIGUEL 230 22468 MIGUEL 500 2	T-5074_ 22464 MIGUEL 230 22472 MIGUELMP 500 1	B	L-1		109%	113%	OP with higher emergency rating, SPS to protect 500/230 kV banks at Miguel, SPS to trip generation at IV/ECO, and/or 3rd Bank at Miguel 500/230kV sub,
SD-SP-T-2	22464 MIGUEL 230 22472 MIGUELMP 500 1	T-5073_ 22464 MIGUEL 230 22468 MIGUEL 500 2	B	L-1		110%	113%	
SD-SP-T-3	22610 OTAYME&1 230 20149 TJI-230 230 1	MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1	B	L-1	114%			Prior to the PST at IV in service, develop best practices to address the reliability concerns in the southern California region, such as OP with higher emergency rating, congestion management, bypassing the series cap banks on the NG-IV 500 kV line, and/or interim SPS including gen tripping at ECO/IV and cross tripping the 230 kV tie with CFE.
SD-SP-T-4	22610 OTAYME&1 230 20149 TJI-230 230 1	SL-5011_ 22360 IMPRLVLY 500 22930 ECO 500 1	B	L-1	113%			
SD-SP-T-5	22610 OTAYME&1 230 20149 TJI-230 230 1	SPS1-50185_Line ECO-MIGUEL 500 kV & GenTrip@IV	B	L-1	104%			
SD-SP-T-6	22430 SILVERGT 230 22596 OLD TOWN 230 1	ML_5005_L_OLD TOWN-OLDTWNTP-MISSION-SILVERGT 230.0 Ckt 1	B	L-1	100%			Develop OP with higher emergency rating, reconfig the 230 kV system, implement interim SPS until the Bay Boulevard 230 kV substation in service

Study Area: San Diego Area - 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	
SD-SP-T-7	22610 OTAYME&1 230 20149 TJI-230 230 1	'G1-5054_PALOMAR ENERGY CENTER 565 MW' -AND- 'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1'	B	G-1/L-1	112%			Prior to the PST at IV in service, develop best practices to address the reliability concerns in the southern California region, such as OP with higher emergency rating, congestion management, bypassing the series cap banks on the NG-IV 500 kV line, and/or interim SPS including gen tripping at ECO/IV and cross tripping the 230 kV tie with CFE.
SD-SP-T-8	22610 OTAYME&1 230 20149 TJI-230 230 1	'G1-5055_OTAY MESA Power PLANT 615MW' -AND- 'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1'	B	G-1/L-1	118%			
SD-SP-T-9	22360 IMPRLVLY 500 22930 ECO 500 1	'G1-5055_OTAY MESA Power PLANT 615MW' -AND- 'MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1'	B	G-1/L-1			108%	Bypass the series cap banks on Sunrise and Southwest Powerlink (SWPL) 500 kV lines from North Gila to Miguel/Suncrest by the completion of the PST at IV, OP for the IV phase shifter with adequate coordination in the region, and/or preferred resources
SD-SP-T-10	23310 OCOTILLO 500 23315 OCOTIL&1 500 1	'G1-5055_OTAY MESA Power PLANT 615MW' -AND- 'SPS1-50285_Line ECO-MIG 500kV & Xtrip Only'	B	G-1/L-1			102%	
SD-SP-T-11	22464 MIGUEL 230 22472 MIGUELMP 500 1	'G1-5054_PALOMAR ENERGY CENTER 565 MW' -AND- 'T-5073_ 22464 MIGUEL 230 22468 MIGUEL 500 2'	B	G-1/L-1		109%	122%	OP with higher emergency rating, SPS to trip generation at IV/ECO, SPS to protect 500/230 kV banks at Miguel, and/or 3rd Bank at Miguel 500/230kV sub,
SD-SP-T-12	22464 MIGUEL 230 22472 MIGUELMP 500 1	'G1-5055_OTAY MESA Power PLANT 615MW' -AND- 'T-5073_ 22464 MIGUEL 230 22468 MIGUEL 500 2'	B	G-1/L-1		118%	130%	

Study Area: San Diego Area - 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	
SD-SP-T-13	22430 SILVERGT 230 22596 OLD TOWN 230 1	'G1-5051_ENCIN/A BIGGEST UNIT 300 MW' -AND- 'ML_5005_L_OLD TOWN-OLDTWNTP-MISSION-SILVERGT 230.0 Ckt 1'	B	G-1/L-1	103%			Develop higher emergency rating, reconfig the 230 kV system, implement interim SPS until the Bay Boulevard 230 kV substation in service
SD-SP-T-14	22430 SILVERGT 230 22596 OLD TOWN 230 1	'G1-5054_PALOMAR ENERGY CENTER 565 MW' -AND- 'ML_5005_L_OLD TOWN-OLDTWNTP-MISSION-SILVERGT 230.0 Ckt 1'	B	G-1/L-1	103%			
SD-SP-T-15	22356 IMPRLVLY 230 22911 IV MP 500 1	IV-8022_IV 8022 50002 & BK81 CB	C1/C2/C5	Breaker		100%	103%	SPS to protect IV 500/230 kV Banks, OP with higher emergency rating, and/or replace the smaller Bank #80 at IV
SD-SP-T-16	22356 IMPRLVLY 230 22360 IMPRLVLY 500 2	IV-8022_IV 8022 50002 & BK81 CB	C1/C2/C5	Breaker		112%	115%	
SD-SP-T-17	22468 MIGUEL 500 22472 MIGUELMP 500 1	ML-2T_MIGUEL 230 kV 2T CB	C1/C2/C5	Breaker		111%	114%	OP with higher emergency rating, SPS to protect 500/230 kV banks at Miguel, SPS to trip generation at IV/ECO, and/or 3rd Bank at Miguel 500/230kV sub,
SD-SP-T-18	22464 MIGUEL 230 22472 MIGUELMP 500 1	ML-2T_MIGUEL 230 kV 2T CB	C1/C2/C5	Breaker		109%	112%	
SD-SP-T-19	22430 SILVERGT 230 22464 MIGUEL 230 1	23022/23023_ML-MS 230 kV #1&#2	C1/C2/C5	Common Structure	103%			Develop higher emergency rating, reconfig the 230 kV system, implement interim SPS until the Bay Boulevard 230 kV substation in service

Study Area: San Diego Area - 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	
SD-SP-T-20	22430 SILVERGT 230 22464 MIGUEL 230 1	MS-5T_MISSION 230 kV 5T CB	C1/C2/C5	Breaker	103%			Develop higher emergency rating, reconfig the 230 kV system, implement interim SPS until the Bay Boulevard 230 kV substation in service
SD-SP-T-21	22610 OTAYME&1 230 20149 TJI-230 230 1	IV-8032_IV 8032 50004 & BK82 CB	C1/C2/C5	Breaker	103%			Prior to the PST at IV in service, develop best practices to address the reliability concerns in the southern California region, such as OP with higher emergency rating, congestion management, bypassing the series cap banks on the NG-IV 500 kV line, and/or interim SPS including gen tripping at ECO/IV and cross tripping the 230 kV tie with CFE.
SD-SP-T-22	22430 SILVERGT 230 22596 OLD TOWN 230 1	23027/23028_23027/28 OT-MS & OT-SG-MS	C1/C2/C5	Common Structure	104%			Develop higher emergency rating, reconfig the 230 kV system, implement interim SPS until the Bay Boulevard 230 kV substation in service
SD-SP-T-23	22464 MIGUEL 230 22461 MIGUEL60 138 1	ML-7T-AB_MIGUEL 230 kV 7T AB CB	C1/C2/C5	Breaker			103%	OP with higher emergency rating, SPS to protect 500/230 kV banks at Miguel, SPS to trip generation at IV/ECO, and/or 3rd Bank at Miguel 500/230kV sub

Study Area: San Diego Area - 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	
SD-SP-T-24	22500 MISSION 138 22496 MISSION 69.0 3	Bus_MS69S_Mission 69kV S Bus	C1/C2/C5	Bus Section	103%			interim SPS or higher emergency rating allowed to shed load until the new Mission 230/69 kv bank in service
SD-SP-T-25	22841 TA TAP 138 22396 LAGNA NL 138 1	13836/13846_TA- PICO CK 1 & 2	C1/C2/C5	Common Structure	117%			Modify TL13835 SPS to cover the N2 outage until SOCRE project in service
SD-SP-T-26	22400 LASPULGS 69.0 22368 JAP MESA 69.0 1	23007OH1/52OH2_SOMSA-SO 1 + 2 230 kV	C1/C2/C5	Common Structure		150%	109%	Reconductor TL692 to achieve 102MVA, or SPS with dynamic VAR support
SD-SP-T-27	22400 LASPULGS 69.0 22368 JAP MESA 69.0 1	23007OH2/52OH2_SMESA-TA+SMESA-CAP 230	C1/C2/C5	Common Structure		150%	110%	Reconductor TL692 to achieve 102MVA, or SPS with dynamic VAR support
SD-SP-T-28	22668 POWAY 69.0 22664 POMERADO 69.0 1	23051/6920_SX-AR 230 kV + SX-AR 69 kV	C1/C2/C5	Common Structure	109%		103%	Build 2nd Poway-Pomerado 69 kV line, new Mission-Penasquitos 230 kV line by using abandoned 230 kV line, and/or prefered resources
SD-SP-T-29	22668 POWAY 69.0 22664 POMERADO 69.0 1	6939/6974_AR - BE ckt 1 & 2	C1/C2/C5	Common Structure	106%		101%	Build 2nd Poway-Pomerado 69 kV line, new Mission-Penasquitos 230 kV line by using abandoned 230 kV line, and/or prefered resources

Study Area: San Diego Area - 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	
SD-SP-T-30	22668 POWAY 69.0 22664 POMERADO 69.0 1	SX-PQ/23051_SX-AR + SX-PEN 230 kV	C1/C2/C5	Breaker		101%	109%	Build 2nd Poway-Pomerado 69 kV line, new Mission-Penasquitos 230 kV line by using abandoned 230 kV line, and/or prefered resources
SD-SP-T-31	22188 DOUBLTTP 69.0 22164 DELMARTP 69.0 1	662/6905_PQ-TP + PQ-GE	C1/C2/C5	Common Structure	102%	109%	109%	Further evaluation
SD-SP-T-32	22200 DUNHILTP 69.0 22188 DOUBLTTP 69.0 1	662/6905_PQ-TP + PQ-GE	C1/C2/C5	Common Structure	102%	109%	109%	Further evaluation
SD-SP-T-33	22644 PENSQTOS 69.0 22164 DELMARTP 69.0 1	662/6905_PQ-TP + PQ-GE	C1/C2/C5	Common Structure		109%	109%	Further evaluation
SD-SP-T-34	22856 TOREYPNS 69.0 22200 DUNHILTP 69.0 1	662/6905_PQ-TP + PQ-GE	C1/C2/C5	Common Structure	108%	115%	115%	Further evaluation
SD-SP-T-35	22306 GARFIELD 69.0 22208 EL CAJON 69.0 1	Bus_MS69S_Mission 69kV S Bus	C1/C2/C5	Bus Section		113%	120%	Further evaluation
SD-SP-T-36	22420 SILVERGT 69.0 22868 URBAN 69.0 1	655/699_SG-CR + SG-B	C1/C2/C5	Common Structure		102%	106%	prefered resources or reconductor TL605
SD-SP-T-37	22356 IMPRLVLY 230 20118 ROA-230 230 1	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1'	C3	L-1-1	128%			
SD-SP-T-38	22356 IMPRLVLY 230 20118 ROA-230 230 1	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'SPS2-50186_Line OCO-SUNCREST 500 kV & ALL-GenTrip@IV'	C3	L-1-1	115%			

Study Area: San Diego Area - 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	
SD-SP-T-39	22610 OTAYME&1 230 20149 TJI-230 230 1	'OP1-50185_Line ECO-MIG 500 kV & ALL-Gen Curtailed@IV' -AND- 'ML_5007_L_SUNCREST-50SUNCREST TP1-SYCAMORE TP1-SYCAMORE 230.0 C'	C3	L-1-1	102%			
SD-SP-T-40	22610 OTAYME&1 230 20149 TJI-230 230 1	'L_40018_Line CHINO 230.0 to MIRALOME 230.0 Ckt 3' -AND- 'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1'	C3	L-1-1	105%			
SD-SP-T-41	22610 OTAYME&1 230 20149 TJI-230 230 1	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'L_40034_Line ELLIS 230.0 to SANTIAGO 230.0 Ckt 1'	C3	L-1-1	105%			
SD-SP-T-42	22610 OTAYME&1 230 20149 TJI-230 230 1	'L_40033_Line ELLIS 230.0 to JOHANN/A 230.0 Ckt 1' -AND- 'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1'	C3	L-1-1	106%			
SD-SP-T-43	22610 OTAYME&1 230 20149 TJI-230 230 1	'SL-5031_ 22832 SYCAMORE 230 22464 MIGUEL 230 2' -AND- 'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1'	C3	L-1-1	106%			
SD-SP-T-44	22610 OTAYME&1 230 20149 TJI-230 230 1	'OP1-50185_Line ECO-MIG 500 kV & ALL-Gen Curtailed@IV' -AND- 'G1-5055_OTAY MESA Power PLANT 615MW'	C3	L-1/G-1	106%			
SD-SP-T-45	22610 OTAYME&1 230 20149 TJI-230 230 1	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'L_40084_Line S.ONOFRE 230.0 to SERRANO 230.0 Ckt 1'	C3	L-1-1	107%			

Study Area: San Diego Area - 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	
SD-SP-T-46	22610 OTAYME&1 230 20149 TJI-230 230 1	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'L_40106_Line VIEJOSC 230.0 to CHINO 230.0 Ckt 1'	C3	L-1-1	108%			Prior to the PST at IV in service, develop best practices to address the reliability concerns in the southern California region, such as OP with higher emergency rating, congestion management, bypassing the series cap banks on the NG-IV 500 kV line, and/or interim SPS including gen tripping at ECO/IV and cross tripping the 230 kV tie with CFE.
SD-SP-T-47	22610 OTAYME&1 230 20149 TJI-230 230 1	'L_4502_Line PALOVRDE 500.0 to COLRIVER 500.0 Ckt 1' -AND- 'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1'	C3	L-1-1	111%			
SD-SP-T-48	22610 OTAYME&1 230 20149 TJI-230 230 1	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'ML_5007_L_SUNCREST-50SUNCREST TP1-SYCAMORE TP1-SYCAMORE 230.0 C'	C3	L-1-1	114%			
SD-SP-T-49	22610 OTAYME&1 230 20149 TJI-230 230 1	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'SPS2-50186_Line OCO-SUNCREST 500 kV & ALL-GenTrip@IV'	C3	L-1-1	148%			
SD-SP-T-50	22610 OTAYME&1 230 20149 TJI-230 230 1	'OP1-50185_Line ECO-MIG 500 kV & ALL-Gen Curtailed@IV' -AND- 'MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1'	C3	L-1-1	149%			
SD-SP-T-51	22464 MIGUEL 230 22468 MIGUEL 500 2	'T-5074_ 22464 MIGUEL 230 22472 MIGUELMP 500 1' -AND- 'SPS2-50386_Line OCO-SUNCREST 500kV & All-GenTrip@IV+Xtrip'	C3	L-1-1	130%	N/A	N/A	

Study Area: San Diego Area - 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	
SD-SP-T-52	22464 MIGUEL 230 22468 MIGUEL 500 2	'T-5075_ 22468 MIGUEL 500 22472 MIGUELMP 500 1' -AND- 'SPS2-50286_Line OCO-SUNCREST 500kV & Xtrip Only'	C3	L-1-1	145%	N/A	N/A	
SD-SP-T-53	22464 MIGUEL 230 22468 MIGUEL 500 2	'T-5074_ 22464 MIGUEL 230 22472 MIGUELMP 500 1' -AND- 'SPS2-50286_Line OCO-SUNCREST 500kV & Xtrip Only'	C3	L-1-1	145%	N/A	N/A	
SD-SP-T-54	22464 MIGUEL 230 22472 MIGUELMP 500 1	'T-5073_ 22464 MIGUEL 230 22468 MIGUEL 500 2' -AND- 'SPS2-50386_Line OCO-SUNCREST 500kV & All-GenTrip@IV+Xtrip'	C3	L-1-1	133%	N/A	N/A	
SD-SP-T-55	22885 SUNCREST 500 22888 SNCRSMP1 500 1	'T-5077_ 22885 SUNCREST 500 22889 SNCRSMP2 500 1' -AND- 'SPS1-50385_Line ECO-MIG 500kV & ALL-GenTrip@IV+Xtrip'	C3	L-1-1	119%	N/A	N/A	
SD-SP-T-56	22885 SUNCREST 500 22889 SNCRSMP2 500 1	'T-5076_ 22885 SUNCREST 500 22888 SNCRSMP1 500 1' -AND- 'SPS1-50385_Line ECO-MIG 500kV & ALL-GenTrip@IV+Xtrip'	C3	L-1-1	119%	N/A	N/A	
SD-SP-T-57	22886 SUNCREST 230 22888 SNCRSMP1 500 1	'T-5077_ 22885 SUNCREST 500 22889 SNCRSMP2 500 1' -AND- 'SPS1-50285_Line ECO-MIG 500kV & Xtrip Only'	C3	L-1-1	130%	N/A	N/A	
SD-SP-T-58	22886 SUNCREST 230 22889 SNCRSMP2 500 1	'T-5076_ 22885 SUNCREST 500 22888 SNCRSMP1 500 1' -AND- 'SPS1-50285_Line ECO-MIG 500kV & Xtrip Only'	C3	L-1-1	130%	N/A	N/A	

Study Area: San Diego Area - 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	
SD-SP-T-59	22886 SUNCREST 230 228860 SUNCREST TP1 230 1	'ML_5008_L_SUNCREST-50SUNCREST TP2-SYCAMORE TP2-SYCAMORE 230.0 C' -AND- 'SPS1-50285_Line ECO-MIG 500kV & Xtrip Only'	C3	L-1-1	142%	N/A	N/A	
SD-SP-T-60	22886 SUNCREST 230 228860 SUNCREST TP1 230 1	'ML_5008_L_SUNCREST-50SUNCREST TP2-SYCAMORE TP2-SYCAMORE 230.0 C' -AND- 'SPS1-50385_Line ECO-MIG 500kV & ALL-GenTrip@IV+Xtrip'	C3	L-1-1	127%	N/A	N/A	
SD-SP-T-61	22886 SUNCREST 230 228861 SUNCREST TP2 230 2	'ML_5007_L_SUNCREST-50SUNCREST TP1-SYCAMORE TP1-SYCAMORE 230.0 C' -AND- 'SPS1-50285_Line ECO-MIG 500kV & Xtrip Only'	C3	L-1-1	142%	N/A	N/A	
SD-SP-T-62	22886 SUNCREST 230 228861 SUNCREST TP2 230 2	'ML_5007_L_SUNCREST-50SUNCREST TP1-SYCAMORE TP1-SYCAMORE 230.0 C' -AND- 'SPS1-50385_Line ECO-MIG 500kV & ALL-GenTrip@IV+Xtrip'	C3	L-1-1	127%	N/A	N/A	
SD-SP-T-63	22930 ECO 500 22935 ECO &1 500 1	'MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1' -AND- 'G1-5055_OTAY MESA Power PLANT 615MW'	C3	L-1/G-1			110%	Bypass the series cap banks on Sunrise and Southwest Powerlink (SWPL) 500 kV lines from North Gila to Miguel/Suncrest by the completion of the PST at IV, OP for the IV phase shifter with adequate coordination in the region , and/or preferred resources

Study Area: San Diego Area - 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	
SD-SP-T-64	22464 MIGUEL 230 22472 MIGUELMP 500 1	'SL-5012_ 22360 IMPRLVLY 500 23310 OCOTILLO 500 1' -AND- 'T-5073_ 22464 MIGUEL 230 22468 MIGUEL 500 2'	C3	L-1-1	110%	155%	175%	OP with higher emergency rating, SPS to protect 500/230 kV banks at Miguel, SPS to trip generation at IV/ECO, and/or 3rd Bank at Miguel 500/230kV sub
SD-SP-T-65	22468 MIGUEL 500 22472 MIGUELMP 500 1	'MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1' -AND- 'T-5073_ 22464 MIGUEL 230 22468 MIGUEL 500 2'	C3	L-1-1	111%	156%	173%	
SD-SP-T-66	22464 MIGUEL 230 22472 MIGUELMP 500 1	'T-5073_ 22464 MIGUEL 230 22468 MIGUEL 500 2' -AND- 'SPS2-50186_Line OCO-SUNCREST 500 kV & ALL-GenTrip@IV'	C3	L-1-1	100%	140%	156%	
SD-SP-T-67	22464 MIGUEL 230 22468 MIGUEL 500 2	'OP2-50186_Line OCO-SUNCREST 500 kV & ALL-Gen Curtailed@IV' -AND- 'T-5074_ 22464 MIGUEL 230 22472 MIGUELMP 500 1'	C3	L-1-1		137%	155%	
SD-SP-T-68	22464 MIGUEL 230 22468 MIGUEL 500 2	'T-5074_ 22464 MIGUEL 230 22472 MIGUELMP 500 1' -AND- 'SPS2-50186_Line OCO-SUNCREST 500 kV & ALL-GenTrip@IV'	C3	L-1-1		137%	154%	
SD-SP-T-69	22464 MIGUEL 230 22472 MIGUELMP 500 1	'OP2-50186_Line OCO-SUNCREST 500 kV & ALL-Gen Curtailed@IV' -AND- 'T-5073_ 22464 MIGUEL 230 22468 MIGUEL 500 2'	C3	L-1-1		139%	158%	
SD-SP-T-70	22885 SUNCREST 500 22888 SNCRSMP1 500 1	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'T-5077_ 22885 SUNCREST 500 22889 SNCRSMP2 500 1'	C3	T-1/L-1		144%	162%	

Study Area: San Diego Area - 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	
SD-SP-T-71	22885 SUNCREST 500 22889 SNCRSMP2 500 1	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'T-5076_ 22885 SUNCREST 500 22888 SNCRSMP1 500 1'	C3	T-1/L-1		144%	162%	
SD-SP-T-72	22886 SUNCREST 230 22888 SNCRSMP1 500 1	'OP1-50185_Line ECO-MIG 500 kV & ALL-Gen Curtailed@IV' -AND- 'T-5077_ 22885 SUNCREST 500 22889 SNCRSMP2 500 1'	C3	T-1/L-1		130%	148%	
SD-SP-T-73	22886 SUNCREST 230 22888 SNCRSMP1 500 1	'T-5079_ 22886 SUNCREST 230 22889 SNCRSMP2 500 1' -AND- 'SPS1-50185_Line ECO-MIG 500 kV & ALL-GenTrip@IV'	C3	L-1-1		123%	139%	
SD-SP-T-74	22886 SUNCREST 230 22889 SNCRSMP2 500 1	'OP1-50185_Line ECO-MIG 500 kV & ALL-Gen Curtailed@IV' -AND- 'T-5078_ 22886 SUNCREST 230 22888 SNCRSMP1 500 1'	C3	T-1/L-1		130%	148%	
SD-SP-T-75	22886 SUNCREST 230 22889 SNCRSMP2 500 1	'T-5078_ 22886 SUNCREST 230 22888 SNCRSMP1 500 1' -AND- 'SPS1-50185_Line ECO-MIG 500 kV & ALL-GenTrip@IV'	C3	L-1-1		123%	139%	
SD-SP-T-76	22886 SUNCREST 230 228860 SUNCREST TP1 230 1	'ML_5008_L_SUNCREST-50SUNCREST TP2-SYCAMORE TP2-SYCAMORE 230.0 C' -AND- 'SPS1-50185_Line ECO-MIG 500 kV & ALL-GenTrip@IV'	C3	L-1-1		127%	144%	

Study Area: San Diego Area - 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	
SD-SP-T-77	22886 SUNCREST 230 228860 SUNCREST TP1 230 1	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'ML_5008_L_SUNCREST-50SUNCREST TP2-SYCAMORE TP2-SYCAMORE 230.0 C'	C3	L-1-1		150%	170%	SPS to open the overloaded bank, bypass the series cap banks on the Sunrise 500 kV line, and/or 3rd 500/230 kV Bank at Suncrest
SD-SP-T-78	22886 SUNCREST 230 228860 SUNCREST TP1 230 1	'OP1-50185_Line ECO-MIG 500 kV & ALL-Gen Curtailed@IV' -AND- 'ML_5008_L_SUNCREST-50SUNCREST TP2-SYCAMORE TP2-SYCAMORE 230.0 C'	C3	L-1-1		134%	152%	
SD-SP-T-79	22886 SUNCREST 230 228860 SUNCREST TP1 230 1	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'G1-5055_OTAY MESA Power PLANT 615MW'	C3	L-1/G-1			109%	
SD-SP-T-80	22886 SUNCREST 230 228861 SUNCREST TP2 230 2	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'ML_5007_L_SUNCREST-50SUNCREST TP1-SYCAMORE TP1-SYCAMORE 230.0 C'	C3	L-1-1		150%	170%	
SD-SP-T-81	22886 SUNCREST 230 228861 SUNCREST TP2 230 2	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'G1-5055_OTAY MESA Power PLANT 615MW'	C3	L-1/G-1			109%	
SD-SP-T-82	22886 SUNCREST 230 228861 SUNCREST TP2 230 2	'OP1-50185_Line ECO-MIG 500 kV & ALL-Gen Curtailed@IV' -AND- 'ML_5007_L_SUNCREST-50SUNCREST TP1-SYCAMORE TP1-SYCAMORE 230.0 C'	C3	L-1-1		134%	152%	

Study Area: San Diego Area - 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	
SD-SP-T-83	22886 SUNCREST 230 228861 SUNCREST TP2 230 2	'ML_5007_L_SUNCREST-50SUNCREST TP1-SYCAMORE TP1-SYCAMORE 230.0 C' -AND- 'SPS1-50185_Line ECO-MIG 500 kV & ALL-GenTrip@IV'	C3	L-1-1		127%	144%	
SD-SP-T-84	22356 IMPRLVLY 230 22360 IMPRLVLY 500 2	'MSL-5084_ 22536 N.GILA 500 22360 IMPRLVLY 500 &1' -AND- 'T-5070_ 22356 IMPRLVLY 230 22360 IMPRLVLY 500 3'	C3	T-1/L-1		105%	113%	SPS to protect IV 500/230 kV banks by tripping generation at IV, and/or upgrade the smaller Bank #80 at IV
SD-SP-T-85	22356 IMPRLVLY 230 22360 IMPRLVLY 500 2	'T-5070_ 22356 IMPRLVLY 230 22360 IMPRLVLY 500 3' -AND- 'T-5071_ 22356 IMPRLVLY 230 22911 IV MP 500 1'	C3	T-1-1		179%	173%	
SD-SP-T-86	22356 IMPRLVLY 230 22360 IMPRLVLY 500 3	'MSL-5084_ 22536 N.GILA 500 22360 IMPRLVLY 500 &1' -AND- 'T-5071_ 22356 IMPRLVLY 230 22911 IV MP 500 1'	C3	T-1/L-1			105%	
SD-SP-T-87	22356 IMPRLVLY 230 22360 IMPRLVLY 500 3	'T-5071_ 22356 IMPRLVLY 230 22911 IV MP 500 1' -AND- 'T-5069_ 22356 IMPRLVLY 230 22360 IMPRLVLY 500 2'	C3	T-1-1		113%	110%	
SD-SP-T-88	22609 OTAYMESA 230 22464 MIGUEL 230 1	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'SL-5022_ 22609 OTAYMESA 230 22464 MIGUEL 230 2'	C3	L-1-1	122%			

Study Area: San Diego Area - 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	
SD-SP-T-89	22609 OTAYMESA 230 22464 MIGUEL 230 1	'MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1' -AND- 'SL-5022_ 22609 OTAYMESA 230 22464 MIGUEL 230 2'	C3	L-1-1	112%			Prior to the PST at IV in service, modify the 230 kV Otay Mesa Energy Center SPS to cover single outage of either TL23041 or TL23042
SD-SP-T-90	22609 OTAYMESA 230 22464 MIGUEL 230 1	'OP1-50185_Line ECO-MIG 500 kV & ALL-Gen Curtailed@IV' -AND- 'SL-5022_ 22609 OTAYMESA 230 22464 MIGUEL 230 2'	C3	L-1-1	114%			
SD-SP-T-91	22609 OTAYMESA 230 22464 MIGUEL 230 1	'OP2-50186_Line OCO-SUNCREST 500 kV & ALL-Gen Curtailed@IV' -AND- 'SL-5022_ 22609 OTAYMESA 230 22464 MIGUEL 230 2'	C3	L-1-1	105%			
SD-SP-T-92	22609 OTAYMESA 230 22464 MIGUEL 230 2	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'SL-5021_ 22609 OTAYMESA 230 22464 MIGUEL 230 1'	C3	L-1-1	122%			
SD-SP-T-93	22609 OTAYMESA 230 22464 MIGUEL 230 2	'MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1' -AND- 'SL-5021_ 22609 OTAYMESA 230 22464 MIGUEL 230 1'	C3	L-1-1	112%			
SD-SP-T-94	22609 OTAYMESA 230 22464 MIGUEL 230 2	'OP1-50185_Line ECO-MIG 500 kV & ALL-Gen Curtailed@IV' -AND- 'SL-5021_ 22609 OTAYMESA 230 22464 MIGUEL 230 1'	C3	L-1-1	114%			
SD-SP-T-95	22609 OTAYMESA 230 22464 MIGUEL 230 2	'OP2-50186_Line OCO-SUNCREST 500 kV & ALL-Gen Curtailed@IV' -AND- 'SL-5021_ 22609 OTAYMESA 230 22464 MIGUEL 230 1'	C3	L-1-1	105%			

Study Area: San Diego Area - 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	
SD-SP-T-96	22430 SILVERGT 230 22597 OLDTWNTP 230 1	'L_4502_Line PALOVRDE 500.0 to COLRIVER 500.0 Ckt 1' -AND- 'SL-5013_ 22430 SILVERGT 230 22596 OLD TOWN 230 1'	C3	L-1-1	106%			Develop higher emergency rating, reconfig the 230 kV system, implement interim SPS until the Bay Boulevard 230 kV substation in service
SD-SP-T-97	22430 SILVERGT 230 22597 OLDTWNTP 230 1	'MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1' -AND- 'SL-5013_ 22430 SILVERGT 230 22596 OLD TOWN 230 1'	C3	L-1-1	102%			
SD-SP-T-98	22430 SILVERGT 230 22597 OLDTWNTP 230 1	'SL-5013_ 22430 SILVERGT 230 22596 OLD TOWN 230 1' -AND- 'SL-5016_ 22464 MIGUEL 230 22504 MISSION 230 1'	C3	L-1-1	115%			
SD-SP-T-99	22430 SILVERGT 230 22597 OLDTWNTP 230 1	'SL-5013_ 22430 SILVERGT 230 22596 OLD TOWN 230 1' -AND- 'SL-5017_ 22464 MIGUEL 230 22504 MISSION 230 2'	C3	L-1-1	115%			
SD-SP-T-100	22430 SILVERGT 230 22597 OLDTWNTP 230 1	'SL-5063_ 22010 ARTESN 230 22832 SYCAMORE 230 1' -AND- 'SL-5013_ 22430 SILVERGT 230 22596 OLD TOWN 230 1'	C3	L-1-1	106%			
SD-SP-T-101	22464 MIGUEL 230 22504 MISSION 230 1	'SL-5029_ 22771 BAY BLVD 230 22464 MIGUEL 230 1' -AND- 'SL-5017_ 22464 MIGUEL 230 22504 MISSION 230 2'	C3	L-1-1			103%	Develop higher emergency rating, prefered resources, and/or reconducor both TL23022 and TL23023
SD-SP-T-102	22464 MIGUEL 230 22504 MISSION 230 2	'SL-5029_ 22771 BAY BLVD 230 22464 MIGUEL 230 1' -AND- 'SL-5016_ 22464 MIGUEL 230 22504 MISSION 230 1'	C3	L-1-1			103%	

Study Area: San Diego Area - 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	
SD-SP-T-103	22430 SILVERGT 230 22596 OLD TOWN 230 1	'L_4502_Line PALOVRDE 500.0 to COLRIVER 500.0 Ckt 1' -AND- 'ML_5005_L_OLD TOWN-OLDTWNTP-MISSION-SILVERGT 230.0 Ckt 1'	C3	L-1-1	107%			Develop higher emergency rating, reconfig the 230 kV system, implement interim SPS until SX-PQ 230 kV line and Bay Boulevard 230 kV substation in service
SD-SP-T-104	22430 SILVERGT 230 22596 OLD TOWN 230 1	'ML_5005_L_OLD TOWN-OLDTWNTP-MISSION-SILVERGT 230.0 Ckt 1' -AND- 'SL-5016_ 22464 MIGUEL 230 22504 MISSION 230 1'	C3	L-1-1	115%			
SD-SP-T-105	22430 SILVERGT 230 22596 OLD TOWN 230 1	'MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1' -AND- 'ML_5005_L_OLD TOWN-OLDTWNTP-MISSION-SILVERGT 230.0 Ckt 1'	C3	L-1-1	103%			
SD-SP-T-106	22430 SILVERGT 230 22596 OLD TOWN 230 1	'SL-5017_ 22464 MIGUEL 230 22504 MISSION 230 2' -AND- 'ML_5005_L_OLD TOWN-OLDTWNTP-MISSION-SILVERGT 230.0 Ckt 1'	C3	L-1-1	114%			
SD-SP-T-107	22430 SILVERGT 230 22596 OLD TOWN 230 1	'SL-506_ 22261 PEN 230 22010 ARTESN 230 1' -AND- 'ML_5005_L_OLD TOWN-OLDTWNTP-MISSION-SILVERGT 230.0 Ckt 1'	C3	L-1-1	103%			
SD-SP-T-108	22430 SILVERGT 230 22596 OLD TOWN 230 1	'SL-5063_ 22010 ARTESN 230 22832 SYCAMORE 230 1' -AND- 'ML_5005_L_OLD TOWN-OLDTWNTP-MISSION-SILVERGT 230.0 Ckt 1'	C3	L-1-1	107%			
SD-SP-T-109	22596 OLD TOWN 230 22504 MISSION 230 1	'SL-5029_ 22771 BAY BLVD 230 22464 MIGUEL 230 1' -AND- 'ML_5005_L_OLD TOWN-OLDTWNTP-MISSION-SILVERGT 230.0 Ckt 1'	C3	L-1-1			101%	Develop higher emergency rating or prefered resources

Study Area: San Diego Area - 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	
SD-SP-T-110	22056 BERNARDO 69.0 22009 ARTESN 69.0 1	'SL-1017_ 22056 BERNARDO 69 22009 ARTESN 69 2' -AND- 'SL-10192_ 22668 POWAY 69 22676 R.CARMEL 69 1'	C3	L-1-1	114%	109%	112%	Further evaluation
SD-SP-T-111	22056 BERNARDO 69.0 22009 ARTESN 69.0 2	'SL-1016_ 22056 BERNARDO 69 22009 ARTESN 69 1' -AND- 'SL-10192_ 22668 POWAY 69 22676 R.CARMEL 69 1'	C3	L-1-1	114%	109%	112%	Further evaluation
SD-SP-T-112	22056 BERNARDO 69.0 22284 FELCTATP 69.0 1	'SL-10192_ 22668 POWAY 69 22676 R.CARMEL 69 1' -AND- 'T-10421_ 22010 ARTESN 230 22009 ARTESN 69 1'	C3	L-1-1	102%	106%	105%	Further evaluation
SD-SP-T-113	22064 BLDCRKTP 69.0 22168 DESCANSO 69.0 1	'SL-1045_ 22152 CREELMAN 69 22408 LOSCOCHS 69 1' -AND- 'SL-1046_ 22152 CREELMAN 69 22828 SYCAMORE 69 1'	C3	L-1-1	106%	138%	126%	Further evaluation
SD-SP-T-114	22064 BLDCRKTP 69.0 22736 SANTYSBL 69.0 1	'SL-1045_ 22152 CREELMAN 69 22408 LOSCOCHS 69 1' -AND- 'SL-1046_ 22152 CREELMAN 69 22828 SYCAMORE 69 1'	C3	L-1-1	106%	138%	126%	Further evaluation
SD-SP-T-115	22064 BLDCRKTP 69.0 22736 SANTYSBL 69.0 1	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C3	L-1-1		112%	118%	Further evaluation
SD-SP-T-116	22136 CLAIRMNT 69.0 22140 CLARMTTP 69.0 1	'SL-10124_ 22448 MESAHGTS 69 22496 MISSION 69 1' -AND- 'SL-1099_ 22372 KEARNY 69 22496 MISSION 69 1'	C3	L-1-1	119%	117%	109%	Further evaluation

Study Area: San Diego Area - 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	
SD-SP-T-117	22160 DEL MAR 69.0 22644 PENSQTOS 69.0 1	'SL-10158_ 22581 NORTHCTY 69 22644 PENSQTOS 69 1' -AND- 'SL-1050_ 22160 DEL MAR 69 22644 PENSQTOS 69 2'	C3	L-1-1	113%	118%	118%	Further evaluation
SD-SP-T-118	22160 DEL MAR 69.0 22644 PENSQTOS 69.0 2	'SL-10158_ 22581 NORTHCTY 69 22644 PENSQTOS 69 1' -AND- 'SL-1049_ 22160 DEL MAR 69 22644 PENSQTOS 69 1'	C3	L-1-1	115%	120%	120%	Further evaluation
SD-SP-T-119	SDGE BackCountry Area	'SL-10106_ 22408 LOSCOCHS 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C3	L-1-1	Diverged	Diverged	Diverged	Further evaluation
SD-SP-T-120	22188 DOUBLTTP 69.0 22164 DELMARTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1093_ 22331 MIRASNTO 69 22644 PENSQTOS 69 1'	C3	L-1-1	112%	118%	118%	Further evaluation
SD-SP-T-121	22188 DOUBLTTP 69.0 22164 DELMARTP 69.0 1	'SL-1089_ 22316 GENESEE 69 22644 PENSQTOS 69 2' -AND- 'SL-1093_ 22331 MIRASNTO 69 22644 PENSQTOS 69 1'	C3	L-1-1	107%	113%	113%	Further evaluation
SD-SP-T-122	22188 DOUBLTTP 69.0 22164 DELMARTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1090_ 22316 GENESEE 69 22864 UCM 69 1'	C3	L-1-1	106%	110%	111%	Further evaluation
SD-SP-T-123	22188 DOUBLTTP 69.0 22164 DELMARTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1089_ 22316 GENESEE 69 22644 PENSQTOS 69 2'	C3	L-1-1	103%	108%	109%	Further evaluation

Study Area: San Diego Area - 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	
SD-SP-T-124	22188 DOUBLTTP 69.0 22164 DELMARTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1092_ 22331 MIRASNTO 69 22316 GENESEE 69 1'	C3	L-1-1	100%	106%	107%	Further evaluation
SD-SP-T-125	22192 DOUBLTTP 138 22300 FRIARS 138 1	'SL-5026_ 22652 PENSQTOS 230 22596 OLD TOWN 230 1' -AND- 'ML_5006_L_SYCAMORE-SYCAMORE TP3-PENSQTOS TP1-PENSQTOS 230.0 Ckt'	C3	L-1-1			115%	Further evaluation
SD-SP-T-126	22200 DUNHILTP 69.0 22188 DOUBLTTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1093_ 22331 MIRASNTO 69 22644 PENSQTOS 69 1'	C3	L-1-1	112%	118%	118%	Further evaluation
SD-SP-T-127	22200 DUNHILTP 69.0 22188 DOUBLTTP 69.0 1	'SL-1089_ 22316 GENESEE 69 22644 PENSQTOS 69 2' -AND- 'SL-1093_ 22331 MIRASNTO 69 22644 PENSQTOS 69 1'	C3	L-1-1	107%	113%	113%	Further evaluation
SD-SP-T-128	22200 DUNHILTP 69.0 22188 DOUBLTTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1090_ 22316 GENESEE 69 22864 UCM 69 1'	C3	L-1-1	106%	110%	111%	Further evaluation
SD-SP-T-129	22200 DUNHILTP 69.0 22188 DOUBLTTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1089_ 22316 GENESEE 69 22644 PENSQTOS 69 2'	C3	L-1-1	103%	108%	109%	Further evaluation

Study Area: San Diego Area - 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	
SD-SP-T-130	22200 DUNHILTP 69.0 22188 DOUBLTTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1092_ 22331 MIRASNTO 69 22316 GENESEE 69 1'	C3	L-1-1	100%	106%	107%	Further evaluation
SD-SP-T-131	22256 ESCNDIDO 69.0 22272 ESCO 69.0 1	'SL-1019_ 22056 BERNARDO 69 22676 R.CARMEL 69 1' -AND- 'SL-10191_ 22668 POWAY 69 22664 POMERADO 69 1'	C3	L-1-1	138%	144%	141%	2nd Poway-Pomerado 69 kV line, preferred resources, and/or load shedding
SD-SP-T-132	22272 ESCO 69.0 22876 WARCYNTP 69.0 1	'SL-1019_ 22056 BERNARDO 69 22676 R.CARMEL 69 1' -AND- 'SL-10191_ 22668 POWAY 69 22664 POMERADO 69 1'	C3	L-1-1	149%	155%	152%	2nd Poway-Pomerado 69 kV line, preferred resources, and/or load shedding
SD-SP-T-133	22316 GENESEE 69.0 22644 PENSQTOS 69.0 2	'SL-10239_ 22856 TOREYPNS 69 22864 UCM 69 1' -AND- 'SL-1093_ 22331 MIRASNTO 69 22644 PENSQTOS 69 1'	C3	L-1-1	136%	144%	145%	Further evaluation
SD-SP-T-134	22316 GENESEE 69.0 22644 PENSQTOS 69.0 2	'SL-10239_ 22856 TOREYPNS 69 22864 UCM 69 1' -AND- 'SL-1092_ 22331 MIRASNTO 69 22316 GENESEE 69 1'	C3	L-1-1	111%	118%	120%	Further evaluation
SD-SP-T-135	22331 MIRASNTO 69.0 22316 GENESEE 69.0 1	'SL-10239_ 22856 TOREYPNS 69 22864 UCM 69 1' -AND- 'SL-1089_ 22316 GENESEE 69 22644 PENSQTOS 69 2'	C3	L-1-1		113%	115%	Further evaluation
SD-SP-T-136	22331 MIRASNTO 69.0 22644 PENSQTOS 69.0 1	'SL-10239_ 22856 TOREYPNS 69 22864 UCM 69 1' -AND- 'SL-1089_ 22316 GENESEE 69 22644 PENSQTOS 69 2'	C3	L-1-1	128%	136%	137%	Further evaluation

Study Area: San Diego Area - 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	
SD-SP-T-137	22372 KEARNY 69.0 22140 CLARMTTP 69.0 1	'SL-10124_ 22448 MESAHGTS 69 22496 MISSION 69 1' -AND- 'SL-1099_ 22372 KEARNY 69 22496 MISSION 69 1'	C3	L-1-1	148%	154%	152%	Further evaluation
SD-SP-T-138	22400 LASPULGS 69.0 22368 JAP MESA 69.0 1	'SL-5052_ 23700 SONGSMESA 230 22113 CAPSTRNO 230 1' -AND- 'SL-5053_ 23700 SONGSMESA 230 22844 TALEGA 230 1'	C3	L-1-1		151%	110%	Reconductor TL692 to achieve 102MVA, or SPS with dynamic VAR support
SD-SP-T-139	22400 LASPULGS 69.0 22368 JAP MESA 69.0 1	'SL-5089_ 24131 S.ONOFRE 230 23700 SONGSMESA 230 1' -AND- 'SL-5090_ 24131 S.ONOFRE 230 23700 SONGSMESA 230 2'	C3	L-1-1		151%	109%	Reconductor TL692 to achieve 102MVA, or SPS with dynamic VAR support
SD-SP-T-140	22420 SILVERGT 69.0 22548 NATNLCTY 69.0 1	'SL-10155_ 22556 NAVSTMTR 69 22820 SWEETWTR 69 1' -AND- 'SL-10164_ 22592 OLD TOWN 69 22380 KETTNER 69 1'	C3	L-1-1		100%	106%	Further evaluation
SD-SP-T-141	22420 SILVERGT 69.0 22548 NATNLCTY 69.0 1	'SL-10155_ 22556 NAVSTMTR 69 22820 SWEETWTR 69 1' -AND- 'T-10305_ 22430 SILVERGT 230 22420 SILVERGT 69 1'	C3	L-1-1		104%	112%	Further evaluation
SD-SP-T-142	22420 SILVERGT 69.0 22548 NATNLCTY 69.0 1	'SL-10155_ 22556 NAVSTMTR 69 22820 SWEETWTR 69 1' -AND- 'T-10306_ 22430 SILVERGT 230 22420 SILVERGT 69 2'	C3	L-1-1		104%	112%	Further evaluation
SD-SP-T-143	22420 SILVERGT 69.0 22868 URBAN 69.0 1	'SL-10114_ 22420 SILVERGT 69 22144 CORONADO 69 1' -AND- 'SL-107_ 22024 B 69 22420 SILVERGT 69 2'	C3	L-1-1		102%	106%	Further evaluation

Study Area: San Diego Area - 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	
SD-SP-T-144	22420 SILVERGT 69.0 22868 URBAN 69.0 1	'T-10318_ 22592 OLD TOWN 69 22596 OLD TOWN 230 1' -AND- 'T-10319_ 22592 OLD TOWN 69 22596 OLD TOWN 230 2'	C3	L-1-1		104%	108%	Further evaluation
SD-SP-T-145	22420 SILVERGT 69.0 22868 URBAN 69.0 1	'SL-106_ 22024 B 69 22420 SILVERGT 69 1' -AND- 'SL-107_ 22024 B 69 22420 SILVERGT 69 2'	C3	L-1-1		115%	119%	Further evaluation
SD-SP-T-146	22500 MISSION 138 22496 MISSION 69.0 1	'T-10315_ 22504 MISSION 230 22496 MISSION 69 1' -AND- 'T-10422_ 22504 MISSION 230 22496 MISSION 69 2'	C3	L-1-1		108%	108%	Further evaluation
SD-SP-T-147	22532 MURRAY 69.0 22306 GARFIELD 69.0 1	'SL-10142_ 22496 MISSION 69 22532 MURRAY 69 1' -AND- 'SL-10143_ 22496 MISSION 69 22532 MURRAY 69 2'	C3	L-1-1		119%	118%	Further evaluation
SD-SP-T-148	22548 NATNLCTY 69.0 22820 SWEETWTR 69.0 1	'SL-10155_ 22556 NAVSTMTR 69 22820 SWEETWTR 69 1' -AND- 'T-10305_ 22430 SILVERGT 230 22420 SILVERGT 69 1'	C3	L-1-1		104%	111%	Further evaluation
SD-SP-T-149	22548 NATNLCTY 69.0 22820 SWEETWTR 69.0 1	'SL-10155_ 22556 NAVSTMTR 69 22820 SWEETWTR 69 1' -AND- 'T-10306_ 22430 SILVERGT 230 22420 SILVERGT 69 2'	C3	L-1-1		104%	111%	Further evaluation
SD-SP-T-150	22644 PENSQTOS 69.0 22164 DELMARTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1092_ 22331 MIRASNTO 69 22316 GENESEE 69 1'	C3	L-1-1		106%	107%	Further evaluation

Study Area: San Diego Area - 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	
SD-SP-T-151	22644 PENSQTOS 69.0 22164 DELMARTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1089_ 22316 GENESEE 69 22644 PENSQTOS 69 2'	C3	L-1-1		108%	109%	Further evaluation
SD-SP-T-152	22644 PENSQTOS 69.0 22164 DELMARTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1090_ 22316 GENESEE 69 22864 UCM 69 1'	C3	L-1-1		110%	111%	Further evaluation
SD-SP-T-153	22644 PENSQTOS 69.0 22164 DELMARTP 69.0 1	'SL-1089_ 22316 GENESEE 69 22644 PENSQTOS 69 2' -AND- 'SL-1093_ 22331 MIRASNTO 69 22644 PENSQTOS 69 1'	C3	L-1-1		113%	113%	Further evaluation
SD-SP-T-154	22644 PENSQTOS 69.0 22164 DELMARTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1093_ 22331 MIRASNTO 69 22644 PENSQTOS 69 1'	C3	L-1-1		118%	118%	Further evaluation
SD-SP-T-155	22664 POMERADO 69.0 22828 SYCAMORE 69.0 1	'T-10421_ 22010 ARTESN 230 22009 ARTESN 69 1' -AND- 'SL-10190_ 22664 POMERADO 69 22828 SYCAMORE 69 2'	C3	L-1-1	105%	102%	104%	Further evaluation
SD-SP-T-156	22664 POMERADO 69.0 22828 SYCAMORE 69.0 2	'T-10421_ 22010 ARTESN 230 22009 ARTESN 69 1' -AND- 'SL-10189_ 22664 POMERADO 69 22828 SYCAMORE 69 1'	C3	L-1-1	105%	102%	104%	Further evaluation
SD-SP-T-157	22668 POWAY 69.0 22664 POMERADO 69.0 1	'SL-506_ 22261 PEN 230 22010 ARTESN 230 1' -AND- 'SL-5063_ 22010 ARTESN 230 22832 SYCAMORE 230 1'	C3	L-1-1	102%			

Study Area: San Diego Area - 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	
SD-SP-T-158	22668 POWAY 69.0 22664 POMERADO 69.0 1	'T-10421_ 22010 ARTESN 230 22009 ARTESN 69 1' -AND- 'SL-102_ 22009 ARTESN 69 22828 SYCAMORE 69 1'	C3	L-1-1	112%	107%	110%	Build 2nd Poway-Pomerado 69 kV line, new Mission-Penasquitos 230 kV line by using abandoned 230 kV line, preferred resources, and/or load shedding
SD-SP-T-159	22668 POWAY 69.0 22664 POMERADO 69.0 1	'SL-5063_ 22010 ARTESN 230 22832 SYCAMORE 230 1' -AND- 'G1-5054_PALOMAR ENERGY CENTER 565 MW'	C3	L-1/G-1	115%	109%	117%	
SD-SP-T-160	22668 POWAY 69.0 22664 POMERADO 69.0 1	'SL-5063_ 22010 ARTESN 230 22832 SYCAMORE 230 1' -AND- 'ML_5006_L_SYCAMORE-SYCAMORE TP3-PENSQTOS TP1-PENSQTOS 230.0 Ckt'	C3	L-1-1			109%	
SD-SP-T-161	22668 POWAY 69.0 22876 WARCYNTP 69.0 1	'SL-1019_ 22056 BERNARDO 69 22676 R.CARMEL 69 1' -AND- 'SL-10191_ 22668 POWAY 69 22664 POMERADO 69 1'	C3	L-1-1	121%	126%	123%	
SD-SP-T-162	22736 SANTYSBL 69.0 22152 CREELMAN 69.0 1	'SL-1045_ 22152 CREELMAN 69 22408 LOSCOCHS 69 1' -AND- 'SL-1046_ 22152 CREELMAN 69 22828 SYCAMORE 69 1'	C3	L-1-1	147%	170%	153%	Further evaluation
SD-SP-T-163	22768 BAY BLVD 69.0 22520 MONTGYTP 69.0 1	'SL-10215_ 22768 BAY BLVD 69 22516 MONTGMRY 69 1' -AND- 'SL-10219_ 22768 BAY BLVD 69 22820 SWEETWTR 69 1'	C3	L-1-1		106%	109%	Further evaluation

Study Area: San Diego Area - 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	
SD-SP-T-164	22856 TOREYPNS 69.0 22200 DUNHILTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1093_ 22331 MIRASNTO 69 22644 PENSQTOS 69 1'	C3	L-1-1	119%	125%	125%	Further evaluation
SD-SP-T-165	22856 TOREYPNS 69.0 22200 DUNHILTP 69.0 1	'SL-1089_ 22316 GENESEE 69 22644 PENSQTOS 69 2' -AND- 'SL-1093_ 22331 MIRASNTO 69 22644 PENSQTOS 69 1'	C3	L-1-1	114%	120%	120%	Further evaluation
SD-SP-T-166	22856 TOREYPNS 69.0 22200 DUNHILTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1090_ 22316 GENESEE 69 22864 UCM 69 1'	C3	L-1-1	113%	117%	118%	Further evaluation
SD-SP-T-167	22856 TOREYPNS 69.0 22200 DUNHILTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1089_ 22316 GENESEE 69 22644 PENSQTOS 69 2'	C3	L-1-1	109%	115%	115%	Further evaluation
SD-SP-T-168	22856 TOREYPNS 69.0 22200 DUNHILTP 69.0 1	'SL-10188_ 22644 PENSQTOS 69 22856 TOREYPNS 69 1' -AND- 'SL-1092_ 22331 MIRASNTO 69 22316 GENESEE 69 1'	C3	L-1-1	106%	113%	113%	Further evaluation
SD-SP-T-169	22856 TOREYPNS 69.0 22200 DUNHILTP 69.0 1	'SL-1089_ 22316 GENESEE 69 22644 PENSQTOS 69 2' -AND- 'SL-1092_ 22331 MIRASNTO 69 22316 GENESEE 69 1'	C3	L-1-1		106%	107%	Further evaluation
SD-SP-T-170	22856 TOREYPNS 69.0 22864 UCM 69.0 1	'SL-1089_ 22316 GENESEE 69 22644 PENSQTOS 69 2' -AND- 'SL-1093_ 22331 MIRASNTO 69 22644 PENSQTOS 69 1'	C3	L-1-1	136%	144%	145%	Further evaluation

Study Area: San Diego Area - 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	
SD-SP-T-171	22856 TOREYPNS 69.0 22864 UCM 69.0 1	'SL-1089_ 22316 GENESEE 69 22644 PENSQTOS 69 2' -AND- 'SL-1092_ 22331 MIRASNTO 69 22316 GENESEE 69 1'	C3	L-1-1	111%	118%	120%	Further evaluation
SD-SP-T-172	22884 WARNERS 69.0 22688 RINCON 69.0 1	'SL-1045_ 22152 CREELMAN 69 22408 LOSCOCHS 69 1' -AND- 'SL-1046_ 22152 CREELMAN 69 22828 SYCAMORE 69 1'	C3	L-1-1	146%	137%	128%	Further evaluation

Study Area: San Diego Area- 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	
SD-NP-T-1	22464 MIGUEL 230 22468 MIGUEL 500 2	T-5074_ 22464 MIGUEL 230 22472 MIGUELMP 500 1	C3	L-1-1	113%			Prior to the PST at IV in service, develop best practices to address the reliability concerns in the southern California region, such as OP with higher emergency rating, congestion management, bypassing the series cap banks on the NG-IV 500 kV line, and/or interim SPS including gen tripping at ECO/IV and cross tripping the 230 kV tie with CFE.
SD-NP-T-2	22464 MIGUEL 230 22468 MIGUEL 500 2	T-5075_ 22468 MIGUEL 500 22472 MIGUELMP 500 1	C3	L-1-1	132%			
SD-NP-T-3	22464 MIGUEL 230 22468 MIGUEL 500 2	T-5074_ 22464 MIGUEL 230 22472 MIGUELMP 500 1	C3	L-1-1	132%			
SD-NP-T-4	22464 MIGUEL 230 22472 MIGUELMP 500 1	T-5073_ 22464 MIGUEL 230 22468 MIGUEL 500 2	C3	L-1-1	115%			
SD-NP-T-5	22464 MIGUEL 230 22468 MIGUEL 500 1	T-5073_ 22464 MIGUEL 230 22468 MIGUEL 500 2	C3	L-1-1	135%	N/A		
SD-NP-T-6	22886 SUNCREST 230 22888 SNCRSMP1 500 1	T-5077_ 22885 SUNCREST 500 22889 SNCRSMP2 500 1	C3	L-1-1	111%			Prior to the PST at IV in service, develop best practices to address the reliability concerns in the southern California region, such as OP with higher emergency rating, congestion management, bypassing the series cap banks on the NG-IV 500 kV line, and/or interim SPS including gen tripping at ECO/IV and cross tripping the 230 kV tie with CFE.
SD-NP-T-7	22886 SUNCREST 230 22889 SNCRSMP2 500 1	T-5076_ 22885 SUNCREST 500 22888 SNCRSMP1 500 1	C3	L-1-1	111%			
SD-NP-T-8	22886 SUNCREST 230 228860 SUNCREST TP1 230 1	ML_5008_L_SUNCREST-50SUNCREST TP2-SYCAMORE TP2-SYCAMORE 230.0 C	C3	L-1-1	121%			
SD-NP-T-9	22886 SUNCREST 230 228860 SUNCREST TP1 230 1	ML_5008_L_SUNCREST-50SUNCREST TP2-SYCAMORE TP2-SYCAMORE 230.0 C	C3	L-1-1	103%			
SD-NP-T-10	22886 SUNCREST 230 228861 SUNCREST TP2 230 2	ML_5007_L_SUNCREST-50SUNCREST TP1-SYCAMORE TP1-SYCAMORE 230.0 C	C3	L-1-1	121%			
SD-NP-T-11	22886 SUNCREST 230 228861 SUNCREST TP2 230 2	ML_5007_L_SUNCREST-50SUNCREST TP1-SYCAMORE TP1-SYCAMORE 230.0 C	C3	L-1-1	103%			
SD-NP-T-12	22464 MIGUEL 230 22472 MIGUELMP 500 1	SL-5012_ 22360 IMPRLVLY 500 23310 OCOTILLO 500 1	C3	L-1-1	114%			

Study Area: San Diego Area- 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	
SD-NP-T-13	22468 MIGUEL 500 22472 MIGUELMP 500 1	MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1	C3	L-1-1	123%			SPS to protect the overloaded bank, bypassing the series cap banks on the SWPL 500 kV lines, and/or 3rd 500/230 kV Bank at Miguel,
SD-NP-T-14	22464 MIGUEL 230 22472 MIGUELMP 500 1	T-5073_ 22464 MIGUEL 230 22468 MIGUEL 500 2	C3	L-1-1	107%			
SD-NP-T-15	22464 MIGUEL 230 22468 MIGUEL 500 2	OP2-50186_Line OCO-SUNCREST 500 kV & ALL-Gen Curtailed@IV	C3	L-1-1	105%			
SD-NP-T-16	22464 MIGUEL 230 22468 MIGUEL 500 2	T-5074_ 22464 MIGUEL 230 22472 MIGUELMP 500 1	C3	L-1-1	105%			
SD-NP-T-17	22464 MIGUEL 230 22472 MIGUELMP 500 1	OP2-50186_Line OCO-SUNCREST 500 kV & ALL-Gen Curtailed@IV	C3	L-1-1	108%			

Study Area: San Diego Area - Summer Peak

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	
SD-SP-VD-1	SUNCREST 500 KV	SL-5012_ 22360 IMPRLVLY 500 23310 OCOTILLO 500 1	B	L-1			-5%	voltage deviation within SDG&E's acceptable operational voltage limits
SD-SP-VD-2	SUNCREST 500 KV	SPS1-50285_Line ECO-MIGUEL 500kV & Xtrip Only	B	L-1	6%			voltage deviation within SDG&E's acceptable operational voltage limits
SD-SP-VD-3	SUNCREST 230 KV	SPS1-50285_Line ECO-MIGUEL 500kV & Xtrip Only	B	L-1	7%			voltage deviation within SDG&E's acceptable operational voltage limits
SD-SP-VD-4	SYCAMORE 230 KV	SPS1-50285_Line ECO-MIGUEL 500kV & Xtrip Only	B	L-1	6%			voltage deviation within SDG&E's acceptable operational voltage limits
SD-SP-VD-5	BARRETT 69 KV	SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1	B	L-1		6%	7%	Further evaluate
SD-SP-VD-6	CAMERON 69 KV	SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1	B	L-1		5%	6%	Further evaluate
SD-SP-VD-7	CRSTNTS 69 KV	T-10347_ 22836 TALEGA 69 22840 TALEGA 138 1	B	T-1		7%	6%	Further evaluate
SD-SP-VD-8	PENDLETN 69 KV	SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1	B	L-1	6%			voltage deviation within SDG&E's acceptable operational voltage limits
SD-SP-VD-9	ENCNITAS 69 KV	SL-1070_ 22252 ENCNITAS 69 22160 DEL MAR 69 1	B	L-1	7%	6%	7%	voltage deviation within SDG&E's acceptable operational voltage limits
SD-SP-VD-10	JAP MESA 69 KV	T-10347_ 22836 TALEGA 69 22840 TALEGA 138 1	B	T-1		6%		Reconductor TL692 or SPS with dynamic VAR support
SD-SP-VD-11	BASILONE 69 KV	T-10347_ 22836 TALEGA 69 22840 TALEGA 138 1	B	T-1		6%		Reconductor TL692 or SPS with dynamic VAR support
SD-SP-VD-12	LASPULGS 69 KV	ML_1022_L_OCNSDETP-OCEANSDE-SANLUSRY-STUARTTP-LASPULGS-STUART 6	B	L-1			7%	Reconductor TL692 or SPS with dynamic VAR support
SD-SP-VD-13	KUMEYAAY 69 KV	Bus_LL69_Loveland 69kV Bus	C1/C2/C5	Bus Section		10.908		Further evaluate
SD-SP-VD-14	CRESTWD 69 KV	Bus_LL69_Loveland 69kV Bus	C1/C2/C5	Bus Section		10.909		Further evaluate
SD-SP-VD-15	CAMERON 69 KV	Bus_LL69_Loveland 69kV Bus	C1/C2/C5	Bus Section		11.896	11.032	Further evaluate
SD-SP-VD-16	BARRETT 69 KV	Bus_LL69_Loveland 69kV Bus	C1/C2/C5	Bus Section		12.543	12.147	Further evaluate

Study Area: San Diego Area - Summer Peak

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	
SD-SP-VD-17	BOULEVRD 69 KV	'MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1' -AND- 'SPS1-50385_Line ECO-MIG 500kV & ALL-GenTrip@IV+Xtrip'	C	L-1-1	-7%	N/A	N/A	Further Evaluation
SD-SP-VD-18	BOULEVRD 69 KV	'MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1' -AND- 'SPS1-50185_Line ECO-MIG 500 kV & ALL-GenTrip@IV'	C	L-1-1	-5%	-8%		Further Evaluation
SD-SP-VD-19	BOULEVRD 69 KV	'MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1' -AND- 'SPS1-50285_Line ECO-MIG 500kV & Xtrip Only'	C	L-1-1	-6%			Further Evaluation
SD-SP-VD-20	BOULEVRD 69 KV	'MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1' -AND- 'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1'	C	L-1-1	-5%			Further Evaluation
SD-SP-VD-21	POWAY 69 KV	'SL-10191_ 22668 POWAY 69 22664 POMERADO 69 1' -AND- 'SL-1019_ 22056 BERNARDO 69 22676 R.CARMEL 69 1'	C	L-1-1	11%	13%	13%	2nd Poway-Pomerado 69 kV line or load trip
SD-SP-VD-22	RINCON 69 KV	'ML_1024_Line ASH-ASHTP-FELICITA_VALCNTR 69 Ckt 1' -AND- 'SL-10197_ 22688 RINCON 69 22404 LILAC 69 1'	C	L-1-1			13%	Further Evaluation
SD-SP-VD-23	AVOCADO 69 KV	'ML_1021_Line MONSRATE-MORHILTP-MOROHILL-MELROSE 69 Ckt 1' -AND- 'SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1'	C	L-1-1	13%	12%	12%	Further Evaluation
SD-SP-VD-24	AVOCADO 69 KV	'ML_1025_Line AVOCADO-MNSRATTP-MONSRATE-PALA 69 Ckt 1' -AND- 'SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1'	C	L-1-1	15%	11%	11%	Further Evaluation

Study Area: San Diego Area - Summer Peak

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	
SD-SP-VD-25	BARRETT 69 KV	'SL-10113_ 22416 LOVELAND 69 22168 DESCANSO 69 1' -AND- 'SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1'	C	L-1-1		12%	12%	This is considered as SDG&E back country. Further evaluation
SD-SP-VD-26	BARRETT 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	L-1-1		15%	13%	This is considered as SDG&E back country. Further evaluation
SD-SP-VD-27	CAMERON 69 KV	'SL-10113_ 22416 LOVELAND 69 22168 DESCANSO 69 1' -AND- 'SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1'	C	L-1-1		12%	11%	This is considered as SDG&E back country. Further evaluation
SD-SP-VD-28	CAMERON 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	L-1-1		15%	13%	This is considered as SDG&E back country. Further evaluation
SD-SP-VD-29	CRESTWD 69 KV	'SL-10113_ 22416 LOVELAND 69 22168 DESCANSO 69 1' -AND- 'SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1'	C	L-1-1		11%	10%	This is considered as SDG&E back country. Further evaluation
SD-SP-VD-30	CRESTWD 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	L-1-1		15%	13%	This is considered as SDG&E back country. Further evaluation
SD-SP-VD-31	VALCNTR 69 KV	'ML_1024_Line ASH-ASHTP-FELICITA_VALCNTR 69 Ckt 1' -AND- 'SL-10197_ 22688 RINCON 69 22404 LILAC 69 1'	C	L-1-1			13%	Further Evaluation
SD-SP-VD-32	CREELMAN 69 KV	'SL-1046_ 22152 CREELMAN 69 22828 SYCAMORE 69 1' -AND- 'SL-1045_ 22152 CREELMAN 69 22408 LOSCOCHS 69 1'	C	L-1-1		24%	11%	Further Evaluation

Study Area: San Diego Area - Summer Peak

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	
SD-SP-VD-33	DESCANSO 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	L-1-1		14%	12%	This is considered as SDG&E back country. Further evaluation
SD-SP-VD-34	GLENCLIF 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	L-1-1		15%	13%	This is considered as SDG&E back country. Further evaluation
SD-SP-VD-35	LOVELAND 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	L-1-1		15%	13%	This is considered as SDG&E back country. Further evaluation
SD-SP-VD-36	MONSRATE 69 KV	'ML_1021_Line MONSRATE-MORHILTP-MOROHILL-MELROSE 69 Ckt 1' -AND- 'SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1'	C	L-1-1	12%	12%	12%	Further Evaluation
SD-SP-VD-37	MONSRATE 69 KV	'ML_1025_Line AVOCADO-MNSRATTP-MONSRATE-PALA 69 Ckt 1' -AND- 'SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1'	C	L-1-1	14%	10%	11%	Further Evaluation
SD-SP-VD-38	PENDLETN 69 KV	'ML_1021_Line MONSRATE-MORHILTP-MOROHILL-MELROSE 69 Ckt 1' -AND- 'SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1'	C	L-1-1	16%	14%	14%	Further Evaluation
SD-SP-VD-39	PENDLETN 69 KV	'ML_1025_Line AVOCADO-MNSRATTP-MONSRATE-PALA 69 Ckt 1' -AND- 'SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1'	C	L-1-1	18%	13%	13%	Further Evaluation
SD-SP-VD-40	R.CARMEL 69 KV	'SL-1019_ 22056 BERNARDO 69 22676 R.CARMEL 69 1' -AND- 'SL-10191_ 22668 POWAY 69 22664 POMERADO 69 1'	C	L-1-1	12%	15%	14%	2nd Poway-Pomerado 69 kV line or load trip

Study Area: San Diego Area - Summer Peak

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	
SD-SP-VD-41	BackCountry Area 69 KV	'SL-10106_ 22408 LOSCOCHS 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	L-1-1	Diverged	Diverged	Diverged	This is considered as SDG&E back country. Further evaluation
SD-SP-VD-42	WARENCYN 69 KV	'SL-10191_ 22668 POWAY 69 22664 POMERADO 69 1' -AND- 'SL-1019_ 22056 BERNARDO 69 22676 R.CARMEL 69 1'	C	L-1-1		11%	11%	2nd Poway-Pomerado 69 kV line or load trip

Study Area: San Diego Area- Summer Off-Peak & Summer Light Load

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	
SD-NP-VD-1	CRESTWD 69 KV	G1-1022_ 22915 KUMEYAAY 0.69 1	B	L-1	6%			Further evaluate
SD-NP-VD-2	BARRETT 69 KV	SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1	B	L-1		-9%		Further evaluate
SD-NP-VD-3	CAMERON 69 KV	SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1	B	L-1		-8%		Further evaluate
SD-NP-VD-4	CRESTWD 69 KV	SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1	B	L-1		-6%		Further evaluate
SD-NP-VD-5	CRESTWD 69 KV	SL-10248_ 22902 CRESTWD 69 22903 KUMEYAAY 69 1	B	L-1	6%			Further evaluate
SD-NP-VD-6	CAMERON 69 KV	SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1	B	L-1	-6%	-8%		Further evaluate
SD-NP-VD-7	CRESTWD 69 KV	SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1	B	L-1		-6%		Further evaluate
SD-NP-VD-8	CRSTNTS 69 KV	T-10347_ 22836 TALEGA 69 22840 TALEGA 138 1	B	T-1		6%		Further evaluate
SD-NP-VD-9	KUMEYAAY 69 KV	SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1	B	L-1		-6%		Further evaluate
SD-NP-VD-10	KUMEYAAY 69 KV	SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1	B	L-1		-6%		Further evaluate
SD-NP-VD-11	KUMEYAAY 69 KV	Bus_BAR69_Barrett 69kV Bus	B	L-1		-6%		Further evaluate
SD-NP-VD-12	CAMERON 69 KV	Bus_BAR69_Barrett 69kV Bus	C1/C2/C5	Bus Section	-6%	-8%		Further evaluate
SD-NP-VD-13	CRESTWD 69 KV	Bus_CN69_Cameron 69kV Bus	C1/C2/C5	Bus Section	-5%	-7%		Further evaluate
SD-NP-VD-14	CRESTWD 69 KV	Bus_BAR69_Barrett 69kV Bus	C1/C2/C5	Bus Section		-6%		Further evaluate
SD-NP-VD-15	CRESTWD 69 KV	Bus_LL69_Loveland 69kV Bus	C1/C2/C5	Bus Section		-9%		Further evaluate
SD-NP-VD-16	GLENCLIF 69 KV	Bus_LL69_Loveland 69kV Bus	C1/C2/C5	Bus Section		-7%		Further evaluate

Study Area: San Diego Area- Summer Off-Peak & Summer Light Load

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	
SD-NP-VD-17	CAMERON 69 KV	Bus_LL69_Loveland 69kV Bus	C1/C2/C5	Bus Section		-11%		Further evaluate
SD-NP-VD-18	BARRETT 69 KV	Bus_LL69_Loveland 69kV Bus	C1/C2/C5	Bus Section		-12%		Further evaluate
SD-NP-VD-19	AVOCADO 69 KV	'ML_1021_Line MONSRATE-MORHILTP-MOROHILL-MELROSE 69 Ckt 1' -AND- 'SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1'	C	L-1-1	14%	10%		Further Evaluation
SD-NP-VD-20	BARRETT 69 KV	'SL-10113_ 22416 LOVELAND 69 22168 DESCANSO 69 1' -AND- 'SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1'	C	L-1-1		-12%		This is considered as SDG&E back country. Further evaluation
SD-NP-VD-21	CAMERON 69 KV	'SL-10113_ 22416 LOVELAND 69 22168 DESCANSO 69 1' -AND- 'SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1'	C	L-1-1		-11%		This is considered as SDG&E back country. Further evaluation
SD-NP-VD-22	CRESTWD 69 KV	'SL-10113_ 22416 LOVELAND 69 22168 DESCANSO 69 1' -AND- 'SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1'	C	L-1-1		-10%		This is considered as SDG&E back country. Further evaluation
SD-NP-VD-23	MONSRATE 69 KV	'ML_1021_Line MONSRATE-MORHILTP-MOROHILL-MELROSE 69 Ckt 1' -AND- 'SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1'	C	L-1-1	14%	10%		Further Evaluation
SD-NP-VD-24	PENDLETN 69 KV	'ML_1021_Line MONSRATE-MORHILTP-MOROHILL-MELROSE 69 Ckt 1' -AND- 'SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1'	C	L-1-1	16%	12%		Further Evaluation

Study Area: San Diego Area - Summer Peak

High/Low Voltage

ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	
SD-SP-V-1	AVOCADO 69 KV	'ML_1025_Line AVOCADO-MNSRATTP-MONSRATE-PALA 69 Ckt 1' -AND- 'SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1'	C	N-1-1	0.81	0.88	0.88	voltage within SDG&E's acceptable operational voltage limits
SD-SP-V-2	AVOCADO 69 KV	'ML_1021_Line MONSRATE-MORHILTP-MOROHILL-MELROSE 69 Ckt 1' -AND- 'SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1'	C	N-1-1	0.86	0.89	0.89	voltage within SDG&E's acceptable operational voltage limits
SD-SP-V-3	BARRETT 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	N-1-1		0.87	0.89	Further evaluation
SD-SP-V-4	CAMERON 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	N-1-1		0.87	0.88	Further evaluation
SD-SP-V-5	CRESTWD 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	N-1-1		0.87	0.88	Further evaluation
SD-SP-V-6	BOULEVRD 69 KV	'MSL-5085_ 22930 ECO 500 22468 MIGUEL 500 &1' -AND- 'MSL-5086_ 23310 OCOTILLO 500 22885 SUNCREST 500 &1'	C	N-1-1	1.11			Further evaluation
SD-SP-V-7	CAMERNTP 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	N-1-1		0.87	0.88	Further evaluation

Study Area: San Diego Area - Summer Peak

High/Low Voltage

ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	
SD-SP-V-8	CREELMAN 69 KV	'SL-1045_ 22152 CREELMAN 69 22408 LOSCOCHS 69 1' -AND- 'SL-1046_ 22152 CREELMAN 69 22828 SYCAMORE 69 1'	C	N-1-1		0.79		Further evaluation
SD-SP-V-9	GLENCLIF 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	N-1-1		0.87	0.89	Further evaluation
SD-SP-V-10	GLNCLFTP 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	N-1-1		0.88	0.89	Further evaluation
SD-SP-V-11	KUMEYAAY 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	N-1-1		0.87	0.88	Further evaluation
SD-SP-V-12	LOVELAND 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	N-1-1		0.88	0.89	Further evaluation
SD-SP-V-13	PENDLETN 69 KV	'ML_1021_Line MONSRATE-MORHILTP-MOROHILL-MELROSE 69 Ckt 1' -AND- 'SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1'	C	N-1-1	0.84	0.88	0.88	voltage within SDG&E's acceptable operational voltage limits
SD-SP-V-14	PENDLETN 69 KV	'ML_1025_Line AVOCADO-MNSRATTP-MONSRATE-PALA 69 Ckt 1' -AND- 'SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1'	C	N-1-1	0.81	0.89	0.88	voltage within SDG&E's acceptable operational voltage limits

Study Area: San Diego Area - Summer Peak

High/Low Voltage

ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	
SD-SP-V-15	POWAY 69 KV	'SL-1019_ 22056 BERNARDO 69 22676 R.CARMEL 69 1' -AND- 'SL-10191_ 22668 POWAY 69 22664 POMERADO 69 1'	C	N-1-1	0.90	0.87	0.88	2nd Poway-Pomerado 69 kV line or load trip
SD-SP-V-16	BackCountry Area 69 KV	'SL-10106_ 22408 LOSCOCHS 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	N-1-1	Diverged	Diverged	Diverged	Further evaluation

ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2016 Summer Off-Peak	2019 Summer Light Load	N/A	
SD-NP-V-1	CAPSTRNO 138 KV	Base Case	A	N-0		1.06		voltage within SDG&E's acceptable operational limits
SD-NP-V-2	TRABUCO 138 KV	Base Case	A	N-0		1.06		voltage within SDG&E's acceptable operational limits
SD-NP-V-3	LAGNA NL 138 KV	Base Case	A	N-0		1.06		voltage within SDG&E's acceptable operational limits
SD-NP-V-4	MARGARTA 138 KV	Base Case	A	N-0		1.06		voltage within SDG&E's acceptable operational limits
SD-NP-V-5	R.MSNVJO 138 KV	Base Case	A	N-0		1.06		voltage within SDG&E's acceptable operational limits
SD-NP-V-6	PICO 138 KV	Base Case	A	N-0		1.06		voltage within SDG&E's acceptable operational limits
SD-NP-V-7	SANMATEO 138 KV	Base Case	A	N-0		1.06		voltage within SDG&E's acceptable operational limits
SD-NP-V-8	CRESTWD 69 KV	Base Case	A	N-0	1.08	1.09		voltage within SDG&E's acceptable operational limits
SD-NP-V-9	OTAY 69 KV	Base Case	A	N-0		1.06		voltage within SDG&E's acceptable operational limits
SD-NP-V-10	IMPRLBCH 69 KV	Base Case	A	N-0		1.06		voltage within SDG&E's acceptable operational limits
SD-NP-V-11	MONTGMRY 69 KV	Base Case	A	N-0		1.06		voltage within SDG&E's acceptable operational limits
SD-NP-V-12	SANYSDRO 69 KV	Base Case	A	N-0		1.06		voltage within SDG&E's acceptable operational limits
SD-NP-V-13	GLENCLIF 69 KV	Base Case	A	N-0	1.05	1.06		voltage within SDG&E's acceptable operational limits
SD-NP-V-14	OTAYLAKE 69 KV	Base Case	A	N-0		1.06		voltage within SDG&E's acceptable operational limits
SD-NP-V-15	ECO MP 500 KV	SL-5011_ 22360 IMPRLVLY 500 22930 ECO 500 1	B	L-1		1.11		Dynamic VAR support capability at Miguel
SD-NP-V-16	BARRETT 69 KV	SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1	B	L-1		1.13		Further evaluate

ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2016 Summer Off-Peak	2019 Summer Light Load	N/A	
SD-NP-V-17	CAMERON 69 KV	SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1	B	L-1		1.13		Further evaluate
SD-NP-V-18	CAMERON 69 KV	SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1	B	L-1	1.11	1.13		Further evaluate
SD-NP-V-19	CRESTWD 69 KV	SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1	B	L-1		1.15		Further evaluate
SD-NP-V-20	CRESTWD 69 KV	SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1	B	L-1	1.12	1.15		Further evaluate
SD-NP-V-21	KUMEYAAY 69 KV	SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1	B	L-1		1.15		Further evaluate
SD-NP-V-22	KUMEYAAY 69 KV	SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1	B	L-1	1.13	1.15		Further evaluate
SD-NP-V-23	ECO MP 500 KV	IV-8032_IV 8032 50004 & BK82 CB	C1/C2/C5	Breaker		1.11		Further evaluate
SD-NP-V-24	BARRETT 69 KV	Bus_LL69_Loveland 69kV Bus	C1/C2/C5	Bus Section		1.16		Further evaluate
SD-NP-V-25	CAMERON 69 KV	Bus_LL69_Loveland 69kV Bus	C1/C2/C5	Bus Section		1.16		Further evaluate
SD-NP-V-26	CAMERON 69 KV	Bus_BAR69_Barrett 69kV Bus	C1/C2/C5	Bus Section	1.11	1.13		Further evaluate
SD-NP-V-27	CRESTWD 69 KV	Bus_LL69_Loveland 69kV Bus	C1/C2/C5	Bus Section	1.11	1.18		Further evaluate
SD-NP-V-28	CRESTWD 69 KV	Bus_CN69_Cameron 69kV Bus	C1/C2/C5	Bus Section	1.13	1.15		Further evaluate
SD-NP-V-29	CRESTWD 69 KV	Bus_BAR69_Barrett 69kV Bus	C1/C2/C5	Bus Section	1.13	1.15		Further evaluate
SD-NP-V-30	GLENCLIF 69 KV	Bus_LL69_Loveland 69kV Bus	C1/C2/C5	Bus Section		1.13		Further evaluate
SD-NP-V-31	KUMEYAAY 69 KV	Bus_LL69_Loveland 69kV Bus	C1/C2/C5	Bus Section	1.11			Further evaluate
SD-NP-V-32	KUMEYAAY 69 KV	Bus_CN69_Cameron 69kV Bus	C1/C2/C5	Bus Section	1.13	1.15		Further evaluate
SD-NP-V-33	KUMEYAAY 69 KV	Bus_BAR69_Barrett 69kV Bus	C1/C2/C5	Bus Section	1.13	1.15		Further evaluate

Study Area: San Diego Area- 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	
SD-NP-V-34	AVOCADO 69 KV	'ML_1021_Line MONSRATE-MORHILTP-MOROHILL-MELROSE 69 Ckt 1' -AND- 'SL-10182_ 22640 PENDLETN 69 22708 SANLUSRY 69 1'	C	L-1-1	0.86			voltage within SDG&E's acceptable operational voltage limits
SD-NP-V-35	BARRETT 69 KV	'SL-10111_ 22412 LOSCOCHS 138 23322 JAMUL 138 1' -AND- 'SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1'	C	L-1-1		1.14		Further evaluate
SD-NP-V-36	BARRETT 69 KV	'ML_1017_Line ML60 TAP-MIGUEL60-TELECYN-JAMUL 138.0 Ckt 1' -AND- 'SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1'	C	L-1-1		1.13		Further evaluate
SD-NP-V-37	CAMERON 69 KV	'SL-10113_ 22416 LOVELAND 69 22168 DESCANSO 69 1' -AND- 'SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1'	C	L-1-1		1.16		Further evaluate
SD-NP-V-38	CAMERON 69 KV	'SL-10113_ 22416 LOVELAND 69 22168 DESCANSO 69 1' -AND- 'SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1'	C	L-1-1		1.16		Further evaluate
SD-NP-V-39	CAMERON 69 KV	'SL-10111_ 22412 LOSCOCHS 138 23322 JAMUL 138 1' -AND- 'SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1'	C	L-1-1		1.14		Further evaluate
SD-NP-V-40	CAMERON 69 KV	'ML_1017_Line ML60 TAP-MIGUEL60-TELECYN-JAMUL 138.0 Ckt 1' -AND- 'SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1'	C	L-1-1		1.14		Further evaluate
SD-NP-V-41	CAMERON 69 KV	'SL-1028_ 22084 BORREGO 69 22083 BR GEN HV 69 1' -AND- 'SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1'	C	L-1-1		1.14		Further evaluate

ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2016 Summer Off-Peak	2019 Summer Light Load	N/A	
SD-NP-V-42	CAMERON 69 KV	'SL-10111_ 22412 LOSCOCHS 138 23322 JAMUL 138 1' -AND- 'SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1'	C	L-1-1		1.14		Further evaluate
SD-NP-V-43	CAMERON 69 KV	'ML_1017_Line ML60 TAP-MIGUEL60-TELECYN-JAMUL 138.0 Ckt 1' -AND- 'SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1'	C	L-1-1		1.14		Further evaluate
SD-NP-V-44	CRESTWD 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	L-1-1		1.13		Further evaluate
SD-NP-V-45	CRESTWD 69 KV	'SL-10113_ 22416 LOVELAND 69 22168 DESCANSO 69 1' -AND- 'SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1'	C	L-1-1		1.18		Further evaluate
SD-NP-V-46	CRESTWD 69 KV	'SL-10113_ 22416 LOVELAND 69 22168 DESCANSO 69 1' -AND- 'SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1'	C	L-1-1		1.18		Further evaluate
SD-NP-V-47	CRESTWD 69 KV	'SL-10111_ 22412 LOSCOCHS 138 23322 JAMUL 138 1' -AND- 'SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1'	C	L-1-1		1.15		Further evaluate
SD-NP-V-48	CRESTWD 69 KV	'ML_1017_Line ML60 TAP-MIGUEL60-TELECYN-JAMUL 138.0 Ckt 1' -AND- 'SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1'	C	L-1-1		1.15		Further evaluate
SD-NP-V-49	CRESTWD 69 KV	'SL-1028_ 22084 BORREGO 69 22083 BR GEN HV 69 1' -AND- 'SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1'	C	L-1-1		1.15		Further evaluate

Study Area: **San Diego Area- 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	
SD-NP-V-50	CRESTWD 69 KV	'SL-10111_ 22412 LOSCOCHS 138 23322 JAMUL 138 1' -AND- 'SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1'	C	L-1-1		1.15		Further evaluate
SD-NP-V-51	CRESTWD 69 KV	'ML_1017_Line ML60 TAP-MIGUEL60-TELECYN-JAMUL 138.0 Ckt 1' -AND- 'SL-1010_ 22040 BARRETT 69 22416 LOVELAND 69 1'	C	L-1-1		1.15		Further evaluate
SD-NP-V-52	CAMERNTP 69 KV	'SL-10112_ 22416 LOVELAND 69 22004 ALPINE 69 1' -AND- 'SL-10109_ 22408 LOSCOCHS 69 22416 LOVELAND 69 1'	C	L-1-1		1.12		Further evaluate
SD-NP-V-53	GLENCLIF 69 KV	'SL-10113_ 22416 LOVELAND 69 22168 DESCANSO 69 1' -AND- 'SL-109_ 22040 BARRETT 69 22104 CAMERON 69 1'	C	L-1-1		1.13		Further evaluate

Study Area: **San Diego Area - Summer Peak**

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.

Study Area: **San Diego Area- Summer Off-Peak & Summer Light Load**

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.

Study Area: **San Diego Area - Summer Peak**

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

Study Area: **San Diego Area- 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