2015-2016 ISO Reliability Assessment - Preliminary Study Results

Study Area: San Diego Area

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 Spring Light Load	N/A	N/A	N/A	
SDGE-T-1	22464 MIGUEL 230 22468 MIGUEL 500 2	ML80_ML BK 80 230/500 ck 1	P1	T-1		115.4	113.5						Rely on Operating Procedure (OP)/ Preferred resources/Energy Storage, modify Miguel Bank SPS and SWPL/SPL SPS shedding gen, add SPS to open overloaded bank, increase SWPL rating, and/or add 3rd bank at Miguel if cost-effective
SDGE-T-2	22464 MIGUEL 230 22468 MIGUEL 500 2	SPS5.7_Miguel BK80 / BK 81 SPS	P1	T-1		106.0	104.0						
SDGE-T-3	22464 MIGUEL 230 22472 MIGUELMP 500 1	ML81_ML BK 81 230/500 ck 2	P1	T-1		114.5	114.5						
SDGE-T-4	22468 MIGUEL 500 22472 MIGUELMP 500 1	ML81_ML BK 81 230/500 ck 2	P1	T-1		117.6	115.6						
SDGE-T-5	22356 IMPRLVLY 230 22361 IV BK80 MP 500 1	IV-8022_IV 8022 50002 & BK81 CB	P2/P4	Breaker Fault/Stuck Breaker		110.4	115.9						Modify existing IV Bank SPS shedding gen, upgrade IV BK 80, and/or add 4th bank at IV
SDGE-T-6	22356 IMPRLVLY 230 22362 IV BK82 MP 500 1	IV-8022_IV 8022 50002 & BK81 CB	P2/P4	Breaker Fault/Stuck Breaker		108.5	111.5						
SDGE-T-7	22360 IMPRLVLY 500 22361 IV BK80 MP 500 1	IV-8022_IV 8022 50002 & BK81 CB	P2/P4	Breaker Fault/Stuck Breaker		110.2	115.9						
SDGE-T-8	22360 IMPRLVLY 500 22362 IV BK82 MP 500 1	IV-8022_IV 8022 50002 & BK81 CB	P2/P4	Breaker Fault/Stuck Breaker		104.2	107.0						
SDGE-T-9	22464 MIGUEL 230 22472 MIGUELMP 500 1	ML-2T_MIGUEL 230 kV 2T CB	P2/P4	Breaker Fault/Stuck Breaker		113.5	113.2						Rely on OP/ Preferred resources/Energy Storage, modify Miguel Bank SPS and SWPL/SPL SPS shedding gen, add SPS to open overloaded bank, increase SWPL rating, and/or add 3rd bank at Miguel if cost-effective
SDGE-T-10	22468 MIGUEL 500 22472 MIGUELMP 500 1	ML-2T_MIGUEL 230 kV 2T CB	P2/P4	Breaker Fault/Stuck Breaker		116.6	114.4						
SDGE-T-11	22771 BAY BLVD 230 22464 MIGUEL 230 1	MS-5T_MISSION 230 kV 5T CB	P2/P4	Breaker Fault/Stuck Breaker		100.1	101.7						Rely on OP, DG, DR, and Energy Storage, build 2nd 230 kV circuit between Miguel-Bay Blvd, or retain/repower retirement resource
SDGE-T-12	22771 BAY BLVD 230 22768 BAY BLVD 69.0 2	BB-1T_BAYBLVD 230 kV 1T CB	P2/P4	Breaker Fault/Stuck Breaker		109.5	110.7						Rely on DG, DR, and Energy Storage, add 3rd bank at Bay Blvd at Bay Blvd, add 2nd Miguel-Bay Blvd 230 kV line, or retain/repower retirement resource

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
SDGE-T-13	22808 STUARTTP 69.0 22400 LASPULGS 69.0 1	SA-1T_SANLUSRY 230 kV 1T CB	P2/P4	Breaker Fault/Stuck Breaker				111.4					Modify existing SPS at Talega until the overloaded section is re-conductored
SDGE-T-14	22771 BAY BLVD 230 22768 BAY BLVD 69.0 1	BB71_BB BK 71 230/69 and TL23026_TL23026 SILVERGT - BAY BLVD ck 1	P6	T-1/L-1		108.9	109.9						Rely on DG, DR, and Energy Storage, add 3rd bank at Bay Blvd at Bay Blvd, add 2nd Miguel-Bay Blvd 230 kV line, or retain/repower retirement resource
SDGE-T-15	22771 BAY BLVD 230 22768 BAY BLVD 69.0 2	BB70_BB BK 70 230/69 and TL23026_TL23026 SILVERGT - BAY BLVD ck 1	P6	T-1/L-1		108.9	109.9						
SDGE-T-16	22232 ENCINA 230 22716 SANLUSRY 230 2	TL23001_TL23001 SANLUSRY - MISSION ck 1 and TL23003_TL23003 SANLUSRY - ENCINA ck 1	P6	L-1-1				101.3					OP to curtail northerbound flow via the North of SONGS path
SDGE-T-17	22464 MIGUEL 230 22468 MIGUEL 500 2	50003_OCOTILLO - SUNCREST ck 1 and ML80_ML BK 80 230/500 ck 1	P6	L-1-1	119.1	139.6	141.5						
SDGE-T-18	22464 MIGUEL 230 22468 MIGUEL 500 2	50005_IMPRLVLY - OCOTILLO□ck 1 and ML80_ML BK 80 230/500 ck 1	P6	L-1-1	114.9	136.3	138.3						
SDGE-T-19	22464 MIGUEL 230 22468 MIGUEL 500 2	L_40106_Line VIEJOSC 230.0 to CHINO 230.0 Ckt 1 and ML80_ML BK 80 230/500 ck 1	P6	L-1-1		104.1	101.3						
SDGE-T-20	22464 MIGUEL 230 22468 MIGUEL 500 2	ML80_ML BK 80 230/500 ck 1 and 50003_OCOTILLO - SUNCREST ck 1	P6	L-1-1	115.2	135.8	137.7						
SDGE-T-21	22464 MIGUEL 230 22468 MIGUEL 500 2	ML80_ML BK 80 230/500 ck 1 and 50005_IMPRLVLY - OCOTILLO□ck 1	P6	L-1-1	111.4	132.8	134.8						
SDGE-T-22	22464 MIGUEL 230 22468 MIGUEL 500 2	SCR80_SUNCREST BK80 230/500 and ML80_ML BK 80 230/500 ck 1	P6	L-1-1		103.2	100.2						
SDGE-T-23	22464 MIGUEL 230 22468 MIGUEL 500 2	SCR81_SUNCREST BK81 230/500 and ML80_ML BK 80 230/500 ck 1	P6	L-1-1		103.2	100.0						
SDGE-T-24	22464 MIGUEL 230 22468 MIGUEL 500 2	TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1 and ML80_ML BK 80 230/500 ck 1	P6	L-1-1		106.6	104.5						
SDGE-T-25	22464 MIGUEL 230 22468 MIGUEL 500 2	TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2 and ML80_ML BK 80 230/500 ck 1	P6	L-1-1		106.6	104.5						
SDGE-T-26	22464 MIGUEL 230 22468 MIGUEL 500 2	TL23070_PIOPICO 230 - TRIP ALL UNITS ck 1 and ML80_ML BK 80 230/500 ck 1	P6	L-1-1		105.5	103.7						
SDGE-T-27	22464 MIGUEL 230 22468 MIGUEL 500 2	TL230WX2_PIOPICO 230 - TRIP 2 UNIT ck 1 and ML80_ML BK 80 230/500 ck 1	P6	L-1-1		105.5	103.7						
SDGE-T-28	22464 MIGUEL 230 22468 MIGUEL 500 2	TL230WX3_PIOPICO 230 - TRIP 1 UNITS ck 1 and ML80_ML BK 80 230/500 ck 1	P6	L-1-1		105.5	103.7						
SDGE-T-29	22464 MIGUEL 230 22472 MIGUELMP 500 1	50003_OCOTILLO - SUNCREST ck 1 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1	119.7	140.0	143.9						

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
SDGE-T-30	22464 MIGUEL 230 22472 MIGUELMP 500 1	50005_IMPRLVLY - OCOTILLO ck 1 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1	115.9	136.6	140.4						Rely on OP/ Preferred resources/Energy Storage, modify Miguel Bank SPS and SWPL/SPL SPS shedding gen, add SPS to open overloaded bank, increase SWPL rating, and/or add 3rd bank at Miguel if cost-effective
SDGE-T-31	22464 MIGUEL 230 22472 MIGUELMP 500 1	L_40106_Line VIEJOSC 230.0 to CHINO 230.0 Ckt 1 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1		102.8	102.6						
SDGE-T-32	22464 MIGUEL 230 22472 MIGUELMP 500 1	ML81_ML BK 81 230/500 ck 2 and 50003_OCOTILLO - SUNCREST ck 1	P6	L-1-1	115.7	135.7	139.4						
SDGE-T-33	22464 MIGUEL 230 22472 MIGUELMP 500 1	ML81_ML BK 81 230/500 ck 2 and 50005_IMPRLVLY - OCOTILLO ck 1	P6	L-1-1	112.4	132.7	136.4						
SDGE-T-34	22464 MIGUEL 230 22472 MIGUELMP 500 1	SCR80_SUNCREST BK80 230/500 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1		101.7	101.5						
SDGE-T-35	22464 MIGUEL 230 22472 MIGUELMP 500 1	SCR81_SUNCREST BK81 230/500 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1		101.7	101.4						
SDGE-T-36	22464 MIGUEL 230 22472 MIGUELMP 500 1	TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1		105.1	105.6						
SDGE-T-37	22464 MIGUEL 230 22472 MIGUELMP 500 1	TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1		105.1	105.6						
SDGE-T-38	22464 MIGUEL 230 22472 MIGUELMP 500 1	TL23070_PIOPICO 230 - TRIP ALL UNITS ck 1 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1		104.3	105.0						
SDGE-T-39	22464 MIGUEL 230 22472 MIGUELMP 500 1	TL230WX2_PIOPICO 230 - TRIP 2 UNIT ck 1 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1		104.3	105.0						
SDGE-T-40	22464 MIGUEL 230 22472 MIGUELMP 500 1	TL230WX3_PIOPICO 230 - TRIP 1 UNITS ck 1 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1		104.3	105.0						
SDGE-T-41	22468 MIGUEL 500 22472 MIGUELMP 500 1	50003_OCOTILLO - SUNCREST ck 1 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1	121.1	142.0	144.1						
SDGE-T-42	22468 MIGUEL 500 22472 MIGUELMP 500 1	50005_IMPRLVLY - OCOTILLO ck 1 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1	116.8	138.7	140.7						
SDGE-T-43	22468 MIGUEL 500 22472 MIGUELMP 500 1	L_40106_Line VIEJOSC 230.0 to CHINO 230.0 Ckt 1 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1		106.1	103.3						
SDGE-T-44	22468 MIGUEL 500 22472 MIGUELMP 500 1	ML81_ML BK 81 230/500 ck 2 and 50003_OCOTILLO - SUNCREST ck 1	P6	L-1-1	117.0	138.1	140.1						
SDGE-T-45	22468 MIGUEL 500 22472 MIGUELMP 500 1	ML81_ML BK 81 230/500 ck 2 and 50005_IMPRLVLY - OCOTILLO ck 1	P6	L-1-1	113.2	135.1	137.1						
SDGE-T-46	22468 MIGUEL 500 22472 MIGUELMP 500 1	SCR80_SUNCREST BK80 230/500 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1		105.1	102.1						
SDGE-T-47	22468 MIGUEL 500 22472 MIGUELMP 500 1	SCR81_SUNCREST BK81 230/500 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1		105.1	101.9						

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
SDGE-T-48	22468 MIGUEL 500 22472 MIGUELMP 500 1	TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1		108.5	106.4						
SDGE-T-49	22468 MIGUEL 500 22472 MIGUELMP 500 1	TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1		108.5	106.4						
SDGE-T-50	22596 OLD TOWN 230 22504 MISSION 230 1	TL23028_TL23028 SILVERGT-OT-MISSION TAP A and TL23042A_TL23042A BAY BLVD-MIGUEL ckt1	P6	L-1-1		103.4	103.8						Rely on DG, DR, and Energy Storage, upgrade the Old Town-Mission 230 kV line, add 2nd Miguel-Bay Blvd 230 kV line, and/or retain/repower retirement resource
SDGE-T-51	22596 OLD TOWN 230 22504 MISSION 230 1	TL23028C_TL23028 SILVERGT-OT-MISSION TAP A and TL23042A_TL23042A BAY BLVD-MIGUEL ckt1	P6	L-1-1		104.3	104.8						
SDGE-T-52	22668 POWAY 69.0 22664 POMERADO 69.0 1	TL23014_TL23014 PEN-ESCNDIDO ck 1 and TL23015_TL23015 PEN-ESCNDIDO ck 2	P6	L-1-1	114.0								OP to curtail load service until the 2nd Poway-Pomerado 69 kV line in service
SDGE-T-53	22716 SANLUSRY 230 22232 ENCINA 230 1	TL23001_TL23001 SANLUSRY - MISSION ck 1 and TL230YY_TL230YY ENCINA - SANLUSRY ck2	P6	L-1-1				101.5					OP to curtail northerbound flow via the North of SONGS path
SDGE-T-54	22740 SANYSDRO 69.0 22616 OTAYLKTP 69.0 1	TL23026_TL23026 SILVERGT - BAY BLVD ck 1 and TL23042A_TL23042A BAY BLVD-MIGUEL ckt1	P6	L-1-1		104.2	103.3						Modify existing SYS shedding gen in the Border area
SDGE-T-55	22808 STUARTTP 69.0 22400 LASPULGS 69.0 1	TL23002_TL23002 SANLUSRY-S.ONOFRE ck 2 and TL23006_TL23006 SANLUSRY - SONGS ck 1	P6	L-1-1				113.7					Rely on OP or existing SPS at Talega until the overloaded section is re-conductored
SDGE-T-56	22808 STUARTTP 69.0 22400 LASPULGS 69.0 1	TL23002_TL23002 SANLUSRY-S.ONOFRE ck 2 and TL23010_TL23010 SANLUSRY - SONGS ck 3	P6	L-1-1				104.7					
SDGE-T-57	22808 STUARTTP 69.0 22400 LASPULGS 69.0 1	TL23006_TL23006 SANLUSRY - SONGS ck 1 and TL23010_TL23010 SANLUSRY - SONGS ck 3	P6	L-1-1				112.8					
SDGE-T-58	22885 SUNCREST 500 22888 SNCRSMP1 500 1	50001_50001 MIGUEL-ECO ck 1 and SCR81_SUNCREST BK81 230/500	P6	L-1-1	106.3	124.9	126.4						
SDGE-T-59	22885 SUNCREST 500 22888 SNCRSMP1 500 1	50004_50004 ECO-IMPRLVLY ck 1 and SCR81_SUNCREST BK81 230/500	P6	L-1-1	104.2	122.7	123.7						
SDGE-T-60	22885 SUNCREST 500 22888 SNCRSMP1 500 1	SCR81_SUNCREST BK81 230/500 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1-1		116.7	117.7						
SDGE-T-61	22885 SUNCREST 500 22888 SNCRSMP1 500 1	SCR81_SUNCREST BK81 230/500 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1-1		114.5	115.3						
SDGE-T-62	22885 SUNCREST 500 22889 SNCRSMP2 500 1	50001_50001 MIGUEL-ECO ck 1 and SCR80_SUNCREST BK80 230/500	P6	L-1-1	105.8	125.0	126.5						

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
SDGE-T-63	22885 SUNCREST 500 22889 SNCRSMP2 500 1	50004_50004 ECO-IMPRLVLY ck 1 and SCR80_SUNCREST BK80 230/500	P6	L-1-1	103.8	122.8	123.8						
SDGE-T-64	22885 SUNCREST 500 22889 SNCRSMP2 500 1	SCR80_SUNCREST BK80 230/500 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1-1		116.7	117.8						
SDGE-T-65	22885 SUNCREST 500 22889 SNCRSMP2 500 1	SCR80_SUNCREST BK80 230/500 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1-1		114.6	115.4						
SDGE-T-66	22886 SUNCREST 230 228860 SUNCREST TP1 230 1	50001_50001 MIGUEL-ECO ck 1 and TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1	P6	L-1-1	114.8	136.6	136.4						
SDGE-T-67	22886 SUNCREST 230 228860 SUNCREST TP1 230 1	50004_50004 ECO-IMPRLVLY ck 1 and TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1	P6	L-1-1	112.6	133.2	133.2						
SDGE-T-68	22886 SUNCREST 230 228860 SUNCREST TP1 230 1	TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1-1	104.6	125.9	125.0						
SDGE-T-69	22886 SUNCREST 230 228860 SUNCREST TP1 230 1	TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1-1	102.8	123.0	122.4						
SDGE-T-70	22886 SUNCREST 230 228861 SUNCREST TP2 230 2	50001_50001 MIGUEL-ECO ck 1 and TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2	P6	L-1-1	114.8	136.6	136.4						
SDGE-T-71	22886 SUNCREST 230 228861 SUNCREST TP2 230 2	50004_50004 ECO-IMPRLVLY ck 1 and TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2	P6	L-1-1	112.6	133.2	133.2						
SDGE-T-72	22886 SUNCREST 230 228861 SUNCREST TP2 230 2	TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1-1	104.6	125.9	125.0						
SDGE-T-73	22886 SUNCREST 230 228861 SUNCREST TP2 230 2	TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1-1	102.8	123.0	122.4						
SDGE-T-74	22886 SUNCREST 230 22888 SNCRSMP1 500 1	50001_50001 MIGUEL-ECO ck 1 and SCR81_SUNCREST BK81 230/500	P6	L-1-1	106.3	124.9	126.4						
SDGE-T-75	22886 SUNCREST 230 22888 SNCRSMP1 500 1	50004_50004 ECO-IMPRLVLY ck 1 and SCR81_SUNCREST BK81 230/500	P6	L-1-1	104.2	122.7	123.7						
SDGE-T-76	22886 SUNCREST 230 22888 SNCRSMP1 500 1	SCR81_SUNCREST BK81 230/500 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1-1		116.7	117.7						
SDGE-T-77	22886 SUNCREST 230 22888 SNCRSMP1 500 1	SCR81_SUNCREST BK81 230/500 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1-1		114.5	115.3						
SDGE-T-78	22886 SUNCREST 230 22889 SNCRSMP2 500 1	50001_50001 MIGUEL-ECO ck 1 and SCR80_SUNCREST BK80 230/500	P6	L-1-1	105.8	125.0	126.5						Rely on OP, Preferred resources/Energy Storage, modify SWPL/SPL SPS shedding gen, add SPS to open overloaded bank/SNC-
SDGE-T-79	22886 SUNCREST 230 22889 SNCRSMP2 500 1	50004_50004 ECO-IMPRLVLY ck 1 and SCR80_SUNCREST BK80 230/500	P6	L-1-1	103.8	122.8	123.8						

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
SDGE-T-80	22886 SUNCREST 230 22889 SNCRSMP2 500 1	SCR80_SUNCREST BK80 230/500 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1-1		116.7	117.8						SX 230 kV line, increase SPL rating, and/or add 3rd bank along with 3rd 230 kV line out of Suncrest if cost-effective
SDGE-T-81	22886 SUNCREST 230 22889 SNCRSMP2 500 1	SCR80_SUNCREST BK80 230/500 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1-1		114.6	115.4						
SDGE-T-82	228860 SUNCREST TP1 230 228320 SYCAMORE TP1 230 1	50001_50001 MIGUEL-ECO ck 1 and TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1	P6	L-1-1	114.9	136.8	136.6						
SDGE-T-83	228860 SUNCREST TP1 230 228320 SYCAMORE TP1 230 1	50004_50004 ECO-IMPRLVLY ck 1 and TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1	P6	L-1-1	112.7	133.3	133.3						
SDGE-T-84	228860 SUNCREST TP1 230 228320 SYCAMORE TP1 230 1	TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1-1	104.7	126.0	125.3						
SDGE-T-85	228860 SUNCREST TP1 230 228320 SYCAMORE TP1 230 1	TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1-1	102.9	123.1	122.6						
SDGE-T-86	228860 SUNCREST TP1 230 228320 SYCAMORE TP1 230 2	50001_50001 MIGUEL-ECO ck 1 and TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1	P6	L-1-1	114.9	136.8	136.6						
SDGE-T-87	228860 SUNCREST TP1 230 228320 SYCAMORE TP1 230 2	50004_50004 ECO-IMPRLVLY ck 1 and TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1	P6	L-1-1	112.7	133.3	133.3						
SDGE-T-88	228860 SUNCREST TP1 230 228320 SYCAMORE TP1 230 2	TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1-1	104.7	126.0	125.3						
SDGE-T-89	228860 SUNCREST TP1 230 228320 SYCAMORE TP1 230 2	TL23054_TL23054 SUNCREST-SYCAMORE 230 ck 1 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1-1	102.9	123.1	122.6						
SDGE-T-90	228861 SUNCREST TP2 230 228321 SYCAMORE TP2 230 1	50001_50001 MIGUEL-ECO ck 1 and TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2	P6	L-1-1	114.9	136.8	136.6						
SDGE-T-91	228861 SUNCREST TP2 230 228321 SYCAMORE TP2 230 1	50004_50004 ECO-IMPRLVLY ck 1 and TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2	P6	L-1-1	112.7	133.3	133.3						
SDGE-T-92	228861 SUNCREST TP2 230 228321 SYCAMORE TP2 230 1	TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1-1	104.7	126.0	125.3						
SDGE-T-93	228861 SUNCREST TP2 230 228321 SYCAMORE TP2 230 1	TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1-1	102.9	123.1	122.6						
SDGE-T-94	228861 SUNCREST TP2 230 228321 SYCAMORE TP2 230 2	50001_50001 MIGUEL-ECO ck 1 and TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2	P6	L-1-1	114.9	136.8	136.6						

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 Spring Light Load	N/A	N/A	N/A	
SDGE-T-95	228861 SUNCREST TP2 230 228321 SYCAMORE TP2 230 2	50004_50004 ECO-IMPRLVLY ck 1 and TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2	P6	L-1-1	112.7	133.3	133.3						
SDGE-T-96	228861 SUNCREST TP2 230 228321 SYCAMORE TP2 230 2	TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1-1	104.7	126.0	125.3						
SDGE-T-97	228861 SUNCREST TP2 230 228321 SYCAMORE TP2 230 2	TL23055_TL23055 SUNCREST-SYCAMORE 230 ck 2 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1-1	102.9	123.1	122.6						
SDGE-T-98	22588 OCNSDETP 69.0 22808 STUARTTP 69.0 1	23007/23052_S.ONOFRE-TA+S.ONOFRE-CAP 230	P7	Common structure		114.4	116.6						Modify existing Talega SPS or upgrade the overloaded Oceanside Tap-Stuart Tap 69 kV section along with SDGE's wood-to-steel program
SDGE-T-99	22668 POWAY 69.0 22664 POMERADO 69.0 1	23014/23015_PEN-ES #1 + #2 230 kV	P7	Common structure	120.8			115.0					OP to curtail load service until the 2nd Poway-Pomerado 69 kV line in service
SDGE-T-100	22771 BAY BLVD 230 22464 MIGUEL 230 1	23022/23023_ML-MS 230 kV #1&#2	P7	Common structure		100.1	101.7						Rely on OP, DG, DR, and Energy Storage, build 2nd 230 kV circuit between Miguel-Bay Blvd, or retain/repower retirement resource
SDGE-T-101	22808 STUARTTP 69.0 22400 LASPULGS 69.0 1	23002/23010_SA-SO 2 + SO-SA 3 230 kV	P7	Common structure				102.2					Modify existing SPS at Talega until the overloaded section is re-conductored
SDGE-T-102	24044 ELLIS 230 24072 JOHANNA 230 1	50001_50001 MIGUEL-ECO ck 1 and L_40034_Line ELLIS 230.0 to SANTIAGO 230.0 Ckt 1	P6	L-1-1			103.6						Rely on OP, Preferred Resources/Energy Storage, or upgrade the Ellis corridor by replacing terminal equipments and increasing the lines clearance if cost-effective
SDGE-T-103	24044 ELLIS 230 24072 JOHANNA 230 1	50004_50004 ECO-IMPRLVLY ck 1 and L_40034_Line ELLIS 230.0 to SANTIAGO 230.0 Ckt 1	P6	L-1-1			102.6						
SDGE-T-104	24044 ELLIS 230 24134 SANTIAGO 230 1	L_40033_Line ELLIS 230.0 to JOHANNA 230.0 Ckt 1 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1-1			101.9						
SDGE-T-105	24044 ELLIS 230 24134 SANTIAGO 230 1	L_40033_Line ELLIS 230.0 to JOHANNA 230.0 Ckt 1 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1-1			101.1						
SDGE-T-106	24044 ELLIS 230 24134 SANTIAGO 230 1	50001_50001 MIGUEL-ECO ck 1 and L_40033_Line ELLIS 230.0 to JOHANNA 230.0 Ckt 1	P6	L-1-1			108.1						
SDGE-T-107	24044 ELLIS 230 24134 SANTIAGO 230 1	50002_50002 N.GILA-IMPRLVLY ck 1 and L_40033_Line ELLIS 230.0 to JOHANNA 230.0 Ckt 1	P6	L-1-1	102.7								

Study Area: San Diego Area

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 Spring Light Load	N/A	N/A	N/A	
SDGE-T-108	24044 ELLIS 230 24134 SANTIAGO 230 1	50004_50004 ECO-IMPRLVLY ck 1 and L_40033_Line ELLIS 230.0 to JOHANNA 230.0 Ckt 1	P6	L-1-1			106.8						

2015-2016 ISO Reliability Assessment - Preliminary Study Results

Study Area: **San Diego Area**

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 Spring Light Load	N/A	N/A	N/A	
X-VD-1													

No voltage deviations identified.

2015-2016 ISO Reliability Assessment - Preliminary Study Results

Study Area: San Diego Area

High/Low Voltage

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 Spring Light Load	N/A	N/A	N/A	
X-V-1													

No high/low voltage deviations identified.

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 Spring Light Load	N/A	N/A	N/A	
X-TS-1												

2015-2016 ISO Reliability Assessment - Preliminary Study Results

Study Area: San Diego Area

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.

2015-2016 ISO Reliability Assessment - Preliminary Study Results

Study Area: San Diego Area

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