2015-2015 ISO Reliability Assessment - 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	2020 SP with Heavy renewable output	2025 SP with Heavy renewable output	2025 SP High CEC Load	
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			120.8	123.9	119.2	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			110.4	113.2	109.5	
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			120.3	124.9	119.9	
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			123.0	126.2	121.5	
SDGE-T-5	22930 ECO 500 22935 ECO &1 500 1	50003_OCOTILLO - SUNCREST ck 1	P1	L-1						101.0	101.2		
SDGE-T-6	22935 ECO &1 500 22468 MIGUEL 500 1	50003_OCOTILLO - SUNCREST ck 1	P1	L-1						101.0	101.2		
SDGE-T-7	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			120.0	127.6	120.7	Modify existing IV Bank SPS shedding gen, upgrade IV BK 80, and/or add 4th bank at IV
SDGE-T-8	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			117.9	122.8	116.2	
SDGE-T-9	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			119.4	127.4	120.7	
SDGE-T-10	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			113.2	117.7	111.5	
SDGE-T-11	22464 MIGUEL 230 22472 MIGUELMP 500 1	ML-2T_MIGUEL 230 kV 2T CB	P2/P4	Breaker Fault/Stuck Breaker		113.5	113.2			119.3	123.9	118.7	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-12	22468 MIGUEL 500 22472 MIGUELMP 500 1	ML-2T_MIGUEL 230 kV 2T CB	P2/P4	Breaker Fault/Stuck Breaker		116.6	114.4			122.0	125.2	120.3	
SDGE-T-13	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			103.9	104.7	104.9	Rely on OP, DG, DR, and Energy Storage, build 2nd 230 kV circuit between Miguel-Bay Blvd, or retain/repower retirement resource
SDGE-T-14	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			110.7	111.6	115.9	Rely on DG, DR, and Energy Storage, add 3rd bank 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	2020 SP with Heavy renewable output	2025 SP with Heavy renewable output	2025 SP High CEC Load	
SDGE-T-15	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-16	228861 SUNCREST TP2 230 228321 SYCAMORE TP2 230 1	SX-22T_SYCAMORE 230 kV 22T CB	P2/P4	Breaker Fault/Stuck Breaker						100.2	100.5		Rely on OP, Preferred resources/Energy Storage, modify SWPL/SPL SPS shedding gen, add SPS to open overloaded bank/SNC-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-17	228861 SUNCREST TP2 230 228321 SYCAMORE TP2 230 2	SX-22T_SYCAMORE 230 kV 22T CB	P2/P4	Breaker Fault/Stuck Breaker						100.2	100.5		
SDGE-T-18	22930 ECO 500 22935 ECO &1 500 1	OCO-1E_OCO 1E TL50003 & TL50005	P2/P4	Breaker Fault/Stuck Breaker						100.6	100.6		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-19	22930 ECO 500 22935 ECO &1 500 1	OCO-2T_OCO 2T TL50003 & TL50006	P2/P4	Breaker Fault/Stuck Breaker						100.6	100.6		
SDGE-T-20	22930 ECO 500 22935 ECO &1 500 1	SCR-2T_SUNCREST 2T BK81 & TL50003	P2/P4	Breaker Fault/Stuck Breaker						101.0	101.2		
SDGE-T-21	22935 ECO &1 500 22468 MIGUEL 500 1	OCO-1E_OCO 1E TL50003 & TL50005	P2/P4	Breaker Fault/Stuck Breaker						100.6	100.6		
SDGE-T-22	22935 ECO &1 500 22468 MIGUEL 500 1	OCO-2T_OCO 2T TL50003 & TL50006	P2/P4	Breaker Fault/Stuck Breaker						100.6	100.6		
SDGE-T-23	22935 ECO &1 500 22468 MIGUEL 500 1	SCR-2T_SUNCREST 2T BK81 & TL50003	P2/P4	Breaker Fault/Stuck Breaker						101.0	101.2		
SDGE-T-24	22464 MIGUEL 230 22468 MIGUEL 500 2	OTAYMESA_OTAY MGP 2x1 and ML80_ML BK 80 230/500 ck 1	P3	G-1/T-1		111.4	111.1			112.2	115.8	118.0	
SDGE-T-25	22464 MIGUEL 230 22468 MIGUEL 500 2	PEN_PEN 2x1 18 and ML80_ML BK 80 230/500 ck 1	P3	G-1/T-1		107.3	107.0			107.8	110.1	112.3	
SDGE-T-26	22464 MIGUEL 230 22472 MIGUELMP 500 1	OTAYMESA_OTAY MGP 2x1 and ML81_ML BK 81 230/500 ck 2	P3	G-1/T-1		110.5	112.5			111.3	117.2	119.5	
SDGE-T-27	22464 MIGUEL 230 22472 MIGUELMP 500 1	PEN_PEN 2x1 18 and ML81_ML BK 81 230/500 ck 2	P3	G-1/T-1		106.1	108.1			106.6	111.2	113.3	
SDGE-T-28	22468 MIGUEL 500 22472 MIGUELMP 500 1	OTAYMESA_OTAY MGP 2x1 and ML81_ML BK 81 230/500 ck 2	P3	G-1/T-1		113.4	113.2			114.2	118.0	120.3	

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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	2020 SP with Heavy renewable output	2025 SP with Heavy renewable output	2025 SP High CEC Load	
SDGE-T-29	22468 MIGUEL 500 22472 MIGUELMP 500 1	PEN_PEN 2x1 18 and ML81_ML BK 81 230/500 ck 2	P3	G-1/T-1		109.3	109.0			109.8	112.2	114.4	
SDGE-T-30	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			110.5	110.5	114.9	Rely on DG, DR, and Energy Storage, add 3rd bank at Bay Blvd, add 2nd Miguel-Bay Blvd 230 kV line, or retain/repower retirement resource
SDGE-T-31	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			110.5	110.5	114.9	
SDGE-T-32	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-33	22356 IMPRLVLY 230 22361 IV BK80 MP 500 1	IV81_IV BK 81 230/500/12 and IV82_IV BK 82 230/500/12	P6	L-1-1							115.9	102.6	Modify existing IV Bank SPS shedding gen, upgrade IV BK 80, and/or add 4th bank at IV
SDGE-T-34	22360 IMPRLVLY 500 22361 IV BK80 MP 500 1	IV81_IV BK 81 230/500/12 and IV82_IV BK 82 230/500/12	P6	L-1-1							117.1	103.4	
SDGE-T-35	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			140.6	147.6	151.8	
SDGE-T-36	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			137.1	143.9	148.5	
SDGE-T-37	22464 MIGUEL 230 22468 MIGUEL 500 2	L_40084_Line S.ONOFRE 230.0 to SERRANO 230.0 Ckt 1 and ML80_ML BK 80 230/500 ck 1	P6	L-1-1								107.1	
SDGE-T-38	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			104.7	105.9	108.9	
SDGE-T-39	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			136.8	143.0	146.6	
SDGE-T-40	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			133.6	139.9	143.8	
SDGE-T-41	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			104.0	104.9	107.2	
SDGE-T-42	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			104.1	104.8	107.3	
SDGE-T-43	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			107.6	109.4	111.8	
SDGE-T-44	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			107.6	109.4	111.8	
SDGE-T-45	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			106.4	108.3	110.5	

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Thermal Overloads

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	2020 SP with Heavy renewable output	2025 SP with Heavy renewable output	2025 SP High CEC Load	
SDGE-T-46	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			106.4	108.3	110.5	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-47	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			106.4	108.3	110.5	
SDGE-T-48	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			141.3	150.1	154.4	
SDGE-T-49	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			137.5	146.4	151.1	
SDGE-T-50	22464 MIGUEL 230 22472 MIGUELMP 500 1	L_40084_Line S.ONOFRE 230.0 to SERRANO 230.0 Ckt 1 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1								108.4	
SDGE-T-51	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			103.4	107.1	110.1	
SDGE-T-52	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			136.9	145.3	149.1	
SDGE-T-53	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			133.6	142.1	146.2	
SDGE-T-54	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			102.6	106.3	108.7	
SDGE-T-55	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			102.6	106.2	108.7	
SDGE-T-56	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			106.1	110.5	112.9	
SDGE-T-57	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			106.1	110.5	112.9	
SDGE-T-58	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			105.2	109.6	111.8	
SDGE-T-59	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			105.2	109.6	111.8	
SDGE-T-60	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			105.2	109.6	111.8	
SDGE-T-61	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			143.1	149.8	154.0	
SDGE-T-62	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			139.4	146.1	150.7	

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Thermal Overloads

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	2020 SP with Heavy renewable output	2025 SP with Heavy renewable output	2025 SP High CEC Load	
SDGE-T-63	22468 MIGUEL 500 22472 MIGUELMP 500 1	HDW-NG_HDW - NG ck 1 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1								100.4	
SDGE-T-64	22468 MIGUEL 500 22472 MIGUELMP 500 1	L_40084_Line S.ONOFRE 230.0 to SERRANO 230.0 Ckt 1 and ML81_ML BK 81 230/500 ck 2	P6	L-1-1								109.1	
SDGE-T-65	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			106.7	107.9	111.0	
SDGE-T-66	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			139.1	145.5	148.8	
SDGE-T-67	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			135.9	142.4	146.0	
SDGE-T-68	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			105.9	106.9	109.3	
SDGE-T-69	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			106.0	106.8	109.3	
SDGE-T-70	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			109.6	111.5	113.9	
SDGE-T-71	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			109.6	111.5	113.9	
SDGE-T-72	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			103.9	106.1	111.1	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-73	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			104.8	107.1	112.1	
SDGE-T-74	22597 OLDTWNTP 230 22504 MISSION 230 1	TL23027_TL23027 OLD TOWN - MISSION ck 1 and TL23042A_TL23042A BAY BLVD-MIGUEL ckt1	P6	L-1-1								104.0	Rely on DG, DR, and Energy Storage, upgrade the Old Town-Mission 230 kV line, add 2nd Miguel-Bay Blvd 230 kV line, or retain/repower retirement
SDGE-T-75	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-76	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

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	2020 SP with Heavy renewable output	2025 SP with Heavy renewable output	2025 SP High CEC Load	
SDGE-T-77	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			102.9		102.1	Modify existing SYS shedding gen in the Border area
SDGE-T-78	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-79	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-80	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-81	22828 SYCAMORE 69.0 22756 SCRIPPS 69.0 1	SX-PQ_SX - PQ 230 ck 1 and TL23042A_TL23042A BAY BLVD-MIGUEL ckt1	P6	L-1-1								100.6	Rely on OP, DG, DR, Energy Storage
SDGE-T-82	22885 SUNCREST 500 22888 SNCRSMP1 500 1	50001_50001 MIGUEL-ECO ck 1 and SCR81_SUNCREST BK81 230/500	P6	L-1/T-1	106.3	124.9	126.4			126.2	131.8	138.6	
SDGE-T-83	22885 SUNCREST 500 22888 SNCRSMP1 500 1	50004_50004 ECO-IMPRLVLY ck 1 and SCR81_SUNCREST BK81 230/500	P6	L-1/T-1	104.2	122.7	123.7			123.6	129.0	136.0	
SDGE-T-84	22885 SUNCREST 500 22888 SNCRSMP1 500 1	SCR81_SUNCREST BK81 230/500 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1/T-1		116.7	117.7			117.9	122.9	128.0	
SDGE-T-85	22885 SUNCREST 500 22888 SNCRSMP1 500 1	SCR81_SUNCREST BK81 230/500 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1/T-1		114.5	115.3			115.5	120.3	125.8	
SDGE-T-86	22885 SUNCREST 500 22889 SNCRSMP2 500 1	50001_50001 MIGUEL-ECO ck 1 and SCR80_SUNCREST BK80 230/500	P6	L-1/T-1	105.8	125.0	126.5			126.2	131.8	138.6	
SDGE-T-87	22885 SUNCREST 500 22889 SNCRSMP2 500 1	50004_50004 ECO-IMPRLVLY ck 1 and SCR80_SUNCREST BK80 230/500	P6	L-1/T-1	103.8	122.8	123.8			123.7	129.2	136.1	
SDGE-T-88	22885 SUNCREST 500 22889 SNCRSMP2 500 1	SCR80_SUNCREST BK80 230/500 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1/T-1		116.7	117.8			118.0	122.9	128.0	
SDGE-T-89	22885 SUNCREST 500 22889 SNCRSMP2 500 1	SCR80_SUNCREST BK80 230/500 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1/T-1		114.6	115.4			115.6	120.4	125.8	
SDGE-T-90	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			138.1	143.2	146.4	
SDGE-T-91	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			134.2	139.4	143.0	
SDGE-T-92	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			127.2	131.0	134.1	

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	2020 SP with Heavy renewable output	2025 SP with Heavy renewable output	2025 SP High CEC Load	
SDGE-T-93	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			124.0	128.0	131.4	Rely on OP, Preferred resources/Energy Storage, modify SWPL/SPL SPS shedding gen, add SPS to open overloaded bank/SNC-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-94	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			138.1	143.2	146.4	
SDGE-T-95	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			134.2	139.4	143.0	
SDGE-T-96	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			127.2	131.0	134.1	
SDGE-T-97	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			124.0	128.0	131.4	
SDGE-T-98	22886 SUNCREST 230 22888 SNCRSMP1 500 1	50001_50001 MIGUEL-ECO ck 1 and SCR81_SUNCREST BK81 230/500	P6	L-1/T-1	106.3	124.9	126.4			126.2	131.8	138.6	
SDGE-T-99	22886 SUNCREST 230 22888 SNCRSMP1 500 1	50004_50004 ECO-IMPRLVLY ck 1 and SCR81_SUNCREST BK81 230/500	P6	L-1/T-1	104.2	122.7	123.7			123.6	129.0	136.0	
SDGE-T-100	22886 SUNCREST 230 22888 SNCRSMP1 500 1	SCR81_SUNCREST BK81 230/500 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1/T-1		116.7	117.7			117.9	122.9	128.0	
SDGE-T-101	22886 SUNCREST 230 22888 SNCRSMP1 500 1	SCR81_SUNCREST BK81 230/500 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1/T-1		114.5	115.3			115.5	120.3	125.8	
SDGE-T-102	22886 SUNCREST 230 22889 SNCRSMP2 500 1	50001_50001 MIGUEL-ECO ck 1 and SCR80_SUNCREST BK80 230/500	P6	L-1/T-1	105.8	125.0	126.5			126.2	131.8	138.6	
SDGE-T-103	22886 SUNCREST 230 22889 SNCRSMP2 500 1	50004_50004 ECO-IMPRLVLY ck 1 and SCR80_SUNCREST BK80 230/500	P6	L-1/T-1	103.8	122.8	123.8			123.7	129.2	136.1	
SDGE-T-104	22886 SUNCREST 230 22889 SNCRSMP2 500 1	SCR80_SUNCREST BK80 230/500 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1/T-1		116.7	117.8			118.0	122.9	128.0	
SDGE-T-105	22886 SUNCREST 230 22889 SNCRSMP2 500 1	SCR80_SUNCREST BK80 230/500 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1/T-1		114.6	115.4			115.6	120.4	125.8	
SDGE-T-106	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			138.3	143.3	146.9	
SDGE-T-107	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			134.3	139.6	143.5	
SDGE-T-108	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			127.3	131.3	134.8	

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	2020 SP with Heavy renewable output	2025 SP with Heavy renewable output	2025 SP High CEC Load	
SDGE-T-109	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			124.1	128.2	132.0	
SDGE-T-110	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			138.3	143.3	146.9	
SDGE-T-111	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			134.3	139.6	143.5	
SDGE-T-112	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			127.3	131.3	134.8	
SDGE-T-113	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			124.1	128.2	132.0	
SDGE-T-114	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			138.3	143.3	146.9	
SDGE-T-115	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			134.3	139.6	143.5	
SDGE-T-116	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			127.3	131.3	134.8	
SDGE-T-117	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			124.1	128.2	132.0	
SDGE-T-118	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			138.3	143.3	146.9	
SDGE-T-119	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			134.3	139.6	143.5	
SDGE-T-120	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			127.3	131.3	134.8	
SDGE-T-121	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			124.1	128.2	132.0	

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	2020 SP with Heavy renewable output	2025 SP with Heavy renewable output	2025 SP High CEC Load	
SDGE-T-122	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			113.9	116.3	124.6	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-123	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-124	22771 BAY BLVD 230 22464 MIGUEL 230 1	23022/23023_ML-MS 230 kV #1&#2	P7	Common structure		100.1	101.7			103.9	104.7	104.9	Rely on OP, DG, DR, and Energy Storage, build 2nd 230 kV circuit between Miguel-Bay Blvd, or retain/repower retirement resource
SDGE-T-125	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-126	22464 MIGUEL 230 22472 MIGUELMP 500 1	23054/23055_SX-SUNCREST ckt 1&2 230kv	P7	Common structure									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-127	22930 ECO 500 22935 ECO &1 500 1	23054/23055_SX-SUNCREST ckt 1&2 230kv	P7	Common structure						100.9	100.8		
SDGE-T-128	22935 ECO &1 500 22468 MIGUEL 500 1	23054/23055_SX-SUNCREST ckt 1&2 230kv	P7	Common structure						101.0	100.8		

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	2020 SP with Heavy renewable output	2025 SP with Heavy renewable output	2025 SP High CEC Load	
SDGE-T-129	24044 ELLIS 230 24072 JOHANNA 230 1	50001_50001 MIGUEL-ECO ck 1 and 50003_OCOTILLO - SUNCREST ck 1	P6	L-1-1								100.3	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-130	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				104.7	112.7	
SDGE-T-131	24044 ELLIS 230 24072 JOHANNA 230 1	50002_50002 N.GILA-IMPRLVLY ck 1 and L_40034_Line ELLIS 230.0 to SANTIAGO 230.0 Ckt 1	P6	L-1-1								103.7	
SDGE-T-132	24044 ELLIS 230 24072 JOHANNA 230 1	50003_OCOTILLO - SUNCREST ck 1 and L_40034_Line ELLIS 230.0 to SANTIAGO 230.0 Ckt 1	P6	L-1-1								102.0	
SDGE-T-133	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				103.5	111.4	
SDGE-T-134	24044 ELLIS 230 24072 JOHANNA 230 1	50005_IMPRLVLY - OCOTILLO ck 1 and L_40034_Line ELLIS 230.0 to SANTIAGO 230.0 Ckt 1	P6	L-1-1								100.7	
SDGE-T-135	24044 ELLIS 230 24072 JOHANNA 230 1	L_40034_Line ELLIS 230.0 to SANTIAGO 230.0 Ckt 1 and 50001_50001 MIGUEL-ECO ck 1	P6	L-1-1								106.5	
SDGE-T-136	24044 ELLIS 230 24072 JOHANNA 230 1	L_40034_Line ELLIS 230.0 to SANTIAGO 230.0 Ckt 1 and 50004_50004 ECO-IMPRLVLY ck 1	P6	L-1-1								105.7	
SDGE-T-137	24044 ELLIS 230 24072 JOHANNA 230 1	L_40084_Line S.ONOFRE 230.0 to SERRANO 230.0 Ckt 1 and L_40034_Line ELLIS 230.0 to SANTIAGO 230.0 Ckt 1	P6	L-1-1								100.7	
SDGE-T-138	24044 ELLIS 230 24072 JOHANNA 230 1	L_40106_Line VIEJOSC 230.0 to CHINO 230.0 Ckt 1 and L_40034_Line ELLIS 230.0 to SANTIAGO 230.0 Ckt 1	P6	L-1-1								101.9	
SDGE-T-139	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				102.7	110.9	
SDGE-T-140	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				101.7	110.2	
SDGE-T-141	24044 ELLIS 230 24134 SANTIAGO 230 1	L_40084_Line S.ONOFRE 230.0 to SERRANO 230.0 Ckt 1 and L_40033_Line ELLIS 230.0 to JOHANNA 230.0 Ckt 1	P6	L-1-1								105.8	

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	2020 SP with Heavy renewable output	2025 SP with Heavy renewable output	2025 SP High CEC Load	
SDGE-T-142	24044 ELLIS 230 24134 SANTIAGO 230 1	L_40106_Line VIEJOSC 230.0 to CHINO 230.0 Ckt 1 and L_40033_Line ELLIS 230.0 to JOHANNA 230.0 Ckt 1	P6	L-1-1								106.7	
SDGE-T-143	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				109.4	118.0	
SDGE-T-144	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							108.1	
SDGE-T-145	24044 ELLIS 230 24134 SANTIAGO 230 1	50003_OCOTILLO - SUNCREST ck 1 and L_40033_Line ELLIS 230.0 to JOHANNA 230.0 Ckt 1	P6	L-1-1								106.2	
SDGE-T-146	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				107.8	116.7	
SDGE-T-147	24044 ELLIS 230 24134 SANTIAGO 230 1	50005_IMPRLVLY - OCOTILLO ck 1 and L_40033_Line ELLIS 230.0 to JOHANNA 230.0 Ckt 1	P6	L-1-1								104.8	

Regarding Table 4-1 of the Study Plan, the “2025 Winter Peak” Base Case for the SDG&E area was changed to “2019/2020 Winter Peak”

Regarding Table 4-2 of the Study Plan, the “2025 Summer Peak and Summer Off-peak with heavy renewable output and IID southern ties to ISO normally open” sensitivity scenario for the SDG&E area was not performed

Regarding Table 4-2 of the Study Plan, a “2025 Summer Peak with heavy renewable output and minimum gas generation commitment” for the SDGE area was added

For the SDG&E area, power factor for the 2017 base case was modeled using the most recent historical values.

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	2020 SP Heavy Renewable & Min Gas Gen	2025 SP & SOP Heavy Renewable & IID South Ties Open	2025 SP High CEC Load	
SDGE-VD-1	BOULEVRD 138 kV	50003_OCOTILLO - SUNCREST ck 1	P1	L-1						5.037			Maintain dynamic reactive support from the Otay Mesa and Pio Pico plants and synchronous condensers at Miguel
SDGE-VD-2	BOULEVRD 138 kV	50005_IMPRLVLY - OCOTILLO ck 1	P1	L-1						5.012			Maintain dynamic reactive support from the Otay Mesa and Pio Pico plants and synchronous condensers at Miguel

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	2020 SP Heavy Renewable & Min Gas Gen	2025 SP & SOP Heavy Renewable & IID South Ties Open	2025 SP High CEC Load	
X-V-1													

No high/low voltage concerns 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	2020 SP with Heavy renewable output	2025 SP with Heavy renewable output	2025 SP High CEC Load	
SDGE-TS-1	TL50001 ECO-MIGUEL 500 KV line out of service followed by TL50003 OCO-SUNCREST 500 kV line outage , with system adjustment between the two outages	P6	L-1-1	None	None	39.9%~30.6 % transient voltage dips at Johanna/Santiago/Ellis/Villa PK/Orcogen buses in SCE	None	None	None	39.7%~30.3 % transient voltage dips at Johanna/Santiago/Ellis/Villa PK/Orcogen buses in SCE	41.7~31.1 % of transient voltage dips at Johanna/Santiago/Ellis /VillaPK/Orcogen/ViejoSC/ LwisANM/Barre/Huntington Beach buses in SCE	Further Evaluation
SDGE-TS-2	TL50003 OCO-SUNCREST 500 KV line out of service followed by TL50001 ECO-MIGUEL 500 kV line outage , with system adjustment between the two outages	P6	L-1-1	None	None	None	None	None	None	None	31.5% transient voltage dip at Johanna 66 kV bus in SCE	Further Evaluation

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.

2015-2015 ISO Reliability Assessment - 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