

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)					Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Off-Peak	2023 SP High CEC Forecast	2023 SpOP Hi Renew & Min Gas Gen	2020 SP Heavy Renewable & Min Gas Gen	
22886 SUNCREST 230 22832 SYCAMORE 230 Ckt #1 and #2	P1L-50001RAS0_ 22930 ECO - 22468 MIGUEL 500KV &1	P1	N-1	<90	<90	<90	<90	<90	<90	105.8	107.4	The 30-minute rating of the lines can be relied upon in allowing operation actions including generation redispatch and adjustment of the IV phase shifting transformers
	P2/P4_ML8013_ML 8013 CB - BK 80&TL50001	P2/P2/P4	Breaker Fault/Stuck Breaker	<90	<90	<90	<90	<90	<90	105.9	107.5	
	P2/P4_ML8023_ML 8023 CB - BK 81&TL50001	P2/P2/P5	Breaker Fault/Stuck Breaker	<90	<90	<90	<90	<90	<90	105.9	107.5	
	P2/P4_ML7013_ML 7013 CB - BK 80&81	P2/P2/P6	Breaker Fault/Stuck Breaker	<90	<90	<90	<90	<90	<90	105.8	107.4	
	P2/P4_ECO-4T_ECO 4T BK83 & TL50004	P2/P2/P8	Breaker Fault/Stuck Breaker	<90	<90	<90	<90	<90	<90	103.4	105.2	
22886 SUNCREST 230 22832 SYCAMORE 230 Ckt #1 or #2	P1L-50001RAS1-P1_ 22930 ECO - 22468 MIGUEL 500KV &1 - AND - P1L-23055RAS1-P6_ 22886 SUNCREST - 22832 SYCAMORE Ckt #2 or #1 with applicable RAS	P6	N-1-1	112.8	120.8	128.2	<90	135.0	133.5	140.9	151.5	With newly implemented TL23054/TL23055 RAS and the 30-minute ratings of the lines, available demand response and energy storage resources could be relied upon in allowing operation actions including adjustment of the IV phase shifting transformers and generation redispatch to eliminate the overload concerns identified in the baseline scenarios. Further assessment concluded that the preferred resources and the operation actions are adequate to mitigate the overload concerns identified in the summer peak cases of the sensitivity scenarios based on the methodology developed to evaluate local capacity solution.
	P1L-23055RAS1-P1_ 22886 SUNCREST - 22832 SYCAMORE Ckt #2 or #1 - AND - P1L-50001RAS1-P6_ 22930 ECO - 22468 MIGUEL 500KV &1 with applicable RAS	P6	N-1-1	102.0	102.7	111.1	<90	117.1	114.1	126.1	138.6	
22886 SUNCREST 230 22888 SNCRSMP1 500/230KV BK80 or BK81	P1L-50001RAS1-P1_ 22930 ECO - 22468 MIGUEL 500KV &1 - AND - P1T-50022RAS0_ 22885 SUNCREST 500/230KV BK81 or BK80	P6	N-1-1	98.1	102.7	110.5	<90	117.3	114.0	120.2	124.7	The 30-minute rating of the banks can be relied upon in allowing operation actions including generation redispatch and adjustment of the IV phase shifting transformers
22464 MIGUEL 230 22468 MIGUEL 500/230 BK80 or BK81	P1L-50003RAS1-P1_ 23310 OCOTILLO - 22885 SUNCREST 500KV &1 - AND - P1T-50012RAS1-P6_ 22464 MIGUEL 500/230KV BK81 or BK80 with applicable RAS	P6	N-1-1	89.6	95.4	103.0	<90	107.8	106.7	111.3	120.3	

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				2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Off-Peak	2023 SP High CEC Forecast	2023 SpOP Hi Renew & Min Gas Gen	2020 SP Heavy Renewable & Min Gas Gen	
22430 SILVERGT 230 22597 OLDTWNTP 230 1 1	P2/P4_SG2-2T_SILVERGT 230 2T CB	P2/P4	Breaker Fault/Stuck Breaker	<90	<90	<90	<90	<90	<90	100.8	<90	The short term emergency ratings of the lines can be relied upon in allowing operation action to re-dispatch generation at Otay Mesa and Pio Pico
	P1L-23011_ 22430 SILVERGT 230 22596 OLD TOWN 230 1 1 - AND - P1L-23033_ 22832 SYCAMORE 230 22652 PENSQTOS 230 1 1	P6	N-1-1	98.0	100.2	106.2	93.8	94.2	104.6	124.7	112.1	
	P1L-23011_ 22430 SILVERGT 230 22596 OLD TOWN 230 1 1 - AND - P1L-50003RAS1-P1_ 23310 OCOTILLO - 22885 SUNCREST 500KV &1	P6	N-1-1	91.6	98.8	104.8	<90	95.9	103.5	<90	<90	
22430 SILVERGT 230 22596 OLD TOWN 230 1 1	P1ML-23019_ 22596 MISSION-OLD TOWN-SILVERGT 3T 230 1 1 - AND - P1L-50003RAS1-P1_ 23310 OCOTILLO - 22885 SUNCREST 500KV &1	P6	N-1-1	91.7	98.8	104.8	<90	96.7	103.7	<90	<90	
	P1ML-23019_ 22596 MISSION-OLD TOWN-SILVERGT 3T 230 1 1 - AND - P1L-23033_ 22832 SYCAMORE 230 22652 PENSQTOS 230 1 1	P6	N-1-1	98.7	100.9	106.9	93.9	95.8	105.6	126.0	113.5	
22716 SANLUSRY 230 22232 ENCINA 230 1 1	P1ML-23064_ 22227 ENCINA-SANLUSRY-PEN 3T 230 1 1 - AND - P1L-50002_ 22536 N.GILA - 22360 IMPRLVLY 500KV &1	P6	N-1-1	<90	<90	<90	104.5	<90	<90	<90	<90	Rely on operation procedure (OP) to mitigate the P6 concerns by reducing northbound flow via the 220/230 kV path north of SONGS switchyard after first level contingency;
22227 ENCINATP 230 22716 SANLUSRY 230 1 1	P1L-23027_ 22716 SANLUSRY 230 22232 ENCINA 230 1 1 - AND - P1L-50002_ 22536 N.GILA - 22360 IMPRLVLY 500KV &1	P6	N-1-1	<90	<90	<90	109.6	<90	<90	<90	<90	
22844 TALEGA 230 24131 S.ONOFRE 230 1 1	P1ML-23061_ 22846 TALEGA-CAPSTRNO-ESCNDIDO 3T 230 1 1 - AND - P1L-TIE23_ 22113 CAPSTRNO 230 24131 S.ONOFRE 230 1 1	P6	N-1-1	<90	<90	108.3	<90	<90	94.4	<90	<90	The 30-minute rating of the lines can be relied upon in allowing operation action to reduce reative power output from the synchronous condensers at Talega
	P1L-TIE23_ 22113 CAPSTRNO 230 24131 S.ONOFRE 230 1 1 - AND - P1L-50002_ 22536 N.GILA - 22360 IMPRLVLY 500KV &1	P6	N-1-1	<90	<90	100.8	<90	<90	90.4	<90	<90	
22356 IMPRLVLY 230 21025 ELCENTSW 230 1 1	P1G_TDM_TDM Plant G-1 - AND - P1L-50002_ 22536 N.GILA - 22360 IMPRLVLY 500KV &1	P3	G-1/N-1	102.5	<90	<90	<90	<90	<90	<90	<90	To be mitigated by the S-line upgrade project approved in 2017~18 TP with expected in-service date of December 2021. The ISO operation procedure can be used as an interim solution to eliminate the overload concern until the project is completed

Study Area: San Diego Main

High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)					Post Cont. Voltage Deviation % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Off-Peak	2023 SP High CEC Forecast	2023 SpOP Hi Renew & Min Gas Gen	2020 SP Heavy Renewable & Min Gas Gen	
Suncrest 500 kV Bus	P2/P4 OCOTILLO CB 2T w/o coordination of the Suncrest SVC facility and the existing shunt capacitors/reactors in the Suncrest 500/230 kV substation	P2/P4	Breaker Fault/Stuck Breaker	1.06~1.1	1.05~1.08	1.04~1.08	1.06~1.12	1.05~1.14	1.06~1.1	1.06~1.1	1.05~1.1	NextEra plans implement an autonomous control system to control the Suncrest SVC (Static Var Compensator) in a manner similar to the control systems used for the synchronous condensers in the San Diego area. This control system along with the existing control systems on the existing shunt capacitors and reactors at Suncrest are expected to eliminate the potential high voltage concern.

Study Area: San Diego Main

Voltage Deviation



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)					Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Off-Peak	2023 SP High CEC Forecast	2023 SpOP Hi Renew & Min Gas Gen	2020 SP Heavy Renewable & Min Gas Gen	
None	None											

Study Area: San Diego Main

Transient Stability



Contingency	Category	Category Description	Transient Stability Performance (Number of voltage and frequency violations)								Potential Mitigation Solutions
			2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Off-Peak	2023 SP High CEC Forecast	2023 SpOP Hi Renew & Min Gas Gen	2020 SP Heavy Renewable & Min Gas Gen	
TL50001 ECO-MIGUEL 500 KV line out of service followed by the loss of Ocotillo-Suncrest 500 kV line that triggers 500 kV line TL50003 Gen Drop RAS, with system adjustment between the two events	P6	3-PH Fault @ Suncrest 500 kV	None	None	None	None	None	None	None	None	No violation
TL50001 ECO-MIGUEL 500 KV line out of service followed by the loss of Sycamore-Suncrest 230 kV line that triggers newly implemented TL23054/TL23055 RAS, with system adjustment between the two events	P6	3-PH Fault @ Sycamore 230 kV	None	None	None	None	None	None	None	None	No violation

Study Area: San Diego Main



Single Contingency Load Drop

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)								Potential Mitigation Solutions
			2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Off-Peak	2023 SP High CEC Forecast	2023 SpOP Hi Renew & Min Gas Gen	2020 SP Heavy Renewable & Min Gas Gen	
No single contingency resulted in total load drop of more than 250 MW											

Study Area: San Diego Main

Single Source Substation with more than 100 MW Load



Substation	Load Served (MW)								Potential Mitigation Solutions
	2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Off-Peak	2023 SP High CEC Forecast	2023 SpOP Hi Renew & Min Gas Gen	2020 SP Heavy Renewable & Min Gas Gen	
No single source substation with of more than 100 MW									