

Study Area: **SCE Bulk**  
Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)					Loading % (Sensitivity Scenarios)			ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	
MW_VINCNT_12 - VINCENT 500 kV	MIDWAY - WIRLWIND No. 3 and MIDWAY - VINCENT No. 2 500 kV lines	P6	N-1-1	120	120	<100	<100	<100	118	<100	<100	Midway-Vincent RAS, System adjustment after first contingency
MW_VINCNT_11 - MW_VINCNT_12	MIDWAY - WIRLWIND No. 3 and MIDWAY - VINCENT No. 2 500 kV lines	P6	N-1-1	126	125	<100	<100	<100	123	<100	<100	Midway-Vincent RAS, System adjustment after first contingency
MW_VINCNT_21 - MW_VINCNT_22	MIDWAY - WIRLWIND No. 3 and MIDWAY - VINCENT No. 1 500 kV lines	P6	N-1-1	129	128	<100	<100	<100	126	<100	<100	Midway-Vincent RAS, System adjustment after first contingency
MW_WRLWND_32 - WIRLWIND 500 kV	MIDWAY - VINCENT No. 1 and MIDWAY - VINCENT No. 2 500 kV lines	P7	DCTL	172	171	<100	<100	<100	169	<100	<100	Increase line rating
MW_WRLWND_31 - MW_WRLWND_32	MIDWAY - VINCENT No. 1 and MIDWAY - VINCENT No. 2 500 kV lines	P7	DCTL	110	109	<100	<100	<100	107	<100	<100	Midway-Vincent RAS
ANTELOPE - WIRLWIND 500 kV	ANTELOPE - WINDHUB No. 1 and VINCENT - WIRLWIND No. 3 500 kV lines	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	105	Sensitivity Only, Re-dispatch resources after initial contingency
MIDWAY- MW_VINCNT_21 500 kV	MIDWAY - WIRLWIND No. 3 and MIDWAY - VINCENT No. 1 500 kV lines	P6	N-1-1	121	121	<100	<100	<100	119	<100	<100	Midway-Vincent RAS, System adjustment after first contingency
MIDWAY - MW_WRLWND_31 500 kV	MIDWAY - VINCENT No. 1 and MIDWAY - VINCENT No. 2 500 kV lines	P7	DCTL	118	117	<100	<100	<100	115	<100	<100	Midway-Vincent RAS

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High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)					t Cont. Voltage Deviation % (Sensitivity Scenar			ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	
MW_VINCNT_22 500 kV	MIDWAY - WIRLWIND No. 3 & MIDWAY - VINCENT No. 1 500 kV lines	P6	N-1-1	1.1721	1.1618	>0.9 & <1.1	>0.9 & <1.1	>0.9 & <1.1	1.1638	>0.9 & <1.1	>0.9 & <1.1	Midway-Vincent RAS, System adjustment after first contingency
MW_WRLWND_31 500 kV	MIDWAY - VINCENT No. 1 & MIDWAY - VINCENT No. 2 500 kV lines	P7	DCTL	1.1107	1.1046	>0.9 & <1.1	>0.9 & <1.1	>0.9 & <1.1	1.1047	>0.9 & <1.1	>0.9 & <1.1	Midway-Vincent RAS

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Voltage Deviation



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)					Voltage PU (Sensitivity Scenarios)			ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	

No voltage deviation issues were identified

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Transient Stability



Contingency	Category	Category Description	Transient Stability Performance					Potential Mitigation Solutions
			Baseline Scenarios			Sensitivity Scenarios		
			2024 Summer Peak	2029 Summer Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	
Imperial Valley–N.Gila 500 kV; 3-Phase fault @ Imperial Valley, normal clearing	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Lugo–Victorville 500 kV, 3-Phase fault @ Lugo, normal clearing	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Paloverde–Colorado River 500 kV; 3-Phase fault @ Paloverde, normal clearing	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
PDCI Monopole; 3-Phase fault @ Sylmar, normal clearing	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Serrano–Valley 500 kV; 3-Phase fault @ Valley, normal clearing	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Palo Verde G-1; 3-Phase fault @ 500 kV, normal clearing	P1	G-1	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Devers-Valley No.1 500 kV & Serrano-Valley 500 kV; 3-Phase fault @ Valley, normal clearing	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Lugo–Eldorado & Lugo–Mohave 500 kV; 3-Phase fault @ Lugo, normal clearing	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Colorado River–Paloverde & Imperial Valley–N.Gila 500 kV; 3-Phase fault @ Paloverde, normal clearing	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Sunrise & SWPL 500 kV; 3-Phase fault @ Suncrest, normal clearing	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Midway–Vincent # 1 & Midway - Whirlwind #3 500 kV with RAS; 3-Phase fault @ Midway, normal clearing	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Midway - Vincent No. 1 & 2 500 kV with RAS; 3-Phase fault @ Midway, normal clearing	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Vincent–Miraloma & Lugo–Rancho Vista 500 kV; 3-Phase fault @ Mira Loma, normal clearing	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Colorado River–Red Bluff 500kV #1 & #2; 3-Phase fault @ Red Bluff, normal clearing	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Devers–Red Bluff 500 kV #1 & #2; 3-Phase fault @ Devers, normal clearing	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Lugo–Vincent 500 KV #1 & #2; 3-Phase fault @ Vincent, normal clearing	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Antelope–Vincent #1 & #2 500 kV; 3-Phase fault @ Vincent, normal clearing	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Loss of PDCI Bipole Converters; 3-Phase fault @ Sylmar, normal clearing	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Loss of IPPDC Bipole; 3-Phase fault @ Adelanto, normal clearing	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Lugo–Miraloma & Lugo–Rancho Vista 500 kV; 3-Phase fault @ Lugo, normal clearing	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No violation
Serrano–Mira Loma & Serrano–Rancho Vista 500 kV; 3-Phase fault @ Serrano, normal clearing	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No violation

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Single Contingency Load Drop

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)										Potential Mitigation Solutions
			Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	

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

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Single Source Substation with more than 100 MW Load

Substation	Load Served (MW)										Potential Mitigation Solutions
	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	

No single source substation with more than 100 MW