

## 2022-2023 ISO Reliability Assessment - Study Results

Study Area: PG&amp;E North Coast &amp; North Bay

## Thermal Overloads

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								2035 ATE	Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions	
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak		2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity		
Clear Lake - Eagle Rock 60 kV (Clear Lake 60 kV)	P2-2A2:21; EGLE RCK 115KV SECTION MA	P2-2	Bus	<100	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Clear Lake - Eagle Rock 60 kV (Clear Lake 60 kV)	P2-3A2:26; EGLE RCK - MA 115KV & EGLE RCK-FULTON-SILVERDO L	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Clear Lake - Eagle Rock 60 kV (Clear Lake 60 kV)	P2-3A2:27; EGLE RCK - MA 115KV & EAGLE ROCK-REDBUD LINE	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Clear Lake - Eagle Rock 60 kV (Clear Lake 60 kV)	P2-3A2:28; EGLE RCK - MA 115KV & EGLE RCK-HOMSTKTP-CORTINA	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Clear Lake - Eagle Rock 60 kV (Clear Lake 60 kV)	P2-4A2:5; MENDOCNO 115KV - SECTION 1D & 2D	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	<100	158	<100	<100	<100	Continue to monitor
Clear Lake - Eagle Rock 60 kV (Clear Lake 60 kV)	P5-5A2:8; EAGLE ROCK 115KV/FAILURE OF NON-REDUNDENT RELAY	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Clear Lake - Eagle Rock 60 kV (Clear Lake 60 kV)	P5-5A2:12; MENDOCINO 115 KV BUS 1&2 (FAILURE OF NON-REDUN	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	<100	156	<100	<100	<100	Continue to monitor
Clear Lake - Eagle Rock 60 kV (Clear Lake 60 kV)	P7-1A2:23; EAGLE ROCK -REDBUD & CORTINA-MENDOCINO #1 LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	<100	155	<100	<100	<100	Continue to monitor
Clear Lake - Eagle Rock 60 kV (Clear Lake 60 kV sub to Konocit Sub 60 kV)	P5-5A2:9; FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	NConv	NConv	70	52	NConv	53	72	54	N/A	NConv	63	72		Project: Clear Lake 60 kV System Reinforcement
Clear Lake - Eagle Rock 60 kV (Clear Lake 60 kV sub to Konocit Sub 60 kV)	EAGLE ROCK-REDBUD 115KV [1480] & GEYSERS #3-CLOVERDALE 115KV [1650] MOAS OPENED ON AIDLINCT_AIDLINGYSR	P6	N-1-1	126	114	140	<100	<100	<100	104	<100	N/A	114	<100	101		Review Project: Clear Lake 60 kV System Reinforcement
Cordelia # 2 60 kV ( Tulucay Jct 60 kV to Cordelia)	P1-2A2:68; TULUCAY-NAPA #2 60KV [8190]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	103	<100	<100	<100	Continue to monitor	
Cordelia # 2 60 kV ( Tulucay Jct 60 kV to Cordelia)	P1-2A6:24; TULUCAY-NAPA #2 60KV [8190]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	103	<100	<100	<100	Continue to monitor	
Cordelia # 2 60 kV ( Tulucay Jct 60 kV to Cordelia)	P7-1A6:12; TULUCAY-NAPA #2 & BASALT #1 60 KV LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	103	<100	<100	<100	Continue to monitor	
Corona- Lakeville 115KV Line	P2-4A2:7; FULTON 115KV - SECTION 2D & 1D	P2-4	Bus Tie Breaker Fault	109	116	149	80	91	118	<100	<100	179	117	<100	<100		SPS, battery storage or line capacity increase
Corona- Lakeville 115KV Line	P5-5A2:1; FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	103	110	130	69	83	107	69	26	193	111	53	65		Install Redundant Relay
Corona- Lakeville 115KV Line	P5-5A2:9; FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	NConv	NConv	102	60	NConv	86	57	38	118	NConv	54	57		Install Redundant Relay
Corona- Lakeville 115KV Line	P5-5C(DC)A2:1; Station	P5	Non-Redundant Battery Supply	108	115	146	80	90	118	75	50	210	116	73	75		Install redundant battery supply
Corona- Lakeville 115KV Line	P5-5A2:10; FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	NConv	NConv	146	80	NConv	118	75	50	NConv	NConv	73	75		Install Redundant Relay
Corona- Lakeville 115KV Line	FULTON-SANTA ROSA #2 115KV [1630] & FULTON-SANTA ROSA #1 115KV [1620]	P6	N-1-1	109	116	150	<100	<100	118	<100	<100	N/A	117	<100	<100		SPS, battery storage or line capacity increase
Corona- Lakeville 115KV Line	P7-1A2:15; FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINES	P7	DTCL	109	116	150	80	90	118	75	50	177	117	73	75		SPS, battery storage or line capacity increase
Corona- Lakeville 115KV Line	P7-1A2:15; FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINES	P7	DTCL	109	116	150	80	90	118	<100	<100	177	117	<100	<100		SPS, battery storage or line capacity increase
Corina - Mendocino 115 kV Line	P2-2A2:21; EGLE RCK 115KV SECTION MA	P2-2	Bus	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P2-2A2:21; EGLE RCK 115KV SECTION MA	P2-2	Bus	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P2-3A2:28; EGLE RCK - MA 115KV & EGLE RCK-HOMSTKTP-CORTINA	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P2-3A2:26; EGLE RCK - MA 115KV & EGLE RCK-FULTON-SILVERDO L	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P2-3A2:27; EGLE RCK - MA 115KV & EAGLE ROCK-REDBUD LINE	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P2-3A2:28; EGLE RCK - MA 115KV & EGLE RCK-HOMSTKTP-CORTINA	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P2-3A2:26; EGLE RCK - MA 115KV & EGLE RCK-FULTON-SILVERDO L	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P2-3A2:27; EGLE RCK - MA 115KV & EAGLE ROCK-REDBUD LINE	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P2-3A2:28; EGLE RCK - MA 115KV & EGLE RCK-HOMSTKTP-CORTINA	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P2-3A2:26; EGLE RCK - MA 115KV & EGLE RCK-FULTON-SILVERDO L	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P2-3A2:27; EGLE RCK - MA 115KV & EAGLE ROCK-REDBUD LINE	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P2-3A2:28; EGLE RCK - MA 115KV & EGLE RCK-HOMSTKTP-CORTINA	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P5-5A2:8; EAGLE ROCK 115KV/FAILURE OF NON-REDUNDENT RELAY	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P5-5C(DC)A2:2; Station	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P5-5C(DC)A2:8; Station	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P5-5A2:8; EAGLE ROCK 115KV/FAILURE OF NON-REDUNDENT RELAY	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P5-5C(DC)A2:2; Station	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P5-5C(DC)A2:8; Station	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P5-5A2:1; FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUND	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	106	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P5-5A2:1; FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUND	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	105	<100	<100	<100	Continue to monitor	
Corina - Mendocino 115 kV Line	P7-1A2:3; EAGLE ROCK-CORTINA & EAGLE ROCK-REDBUD LINES (2)	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	101	<100	<100	<100	Continue to monitor	
Eagle Rock - Cortina 115 kV (Highland to Highland)	P5-5C(DC)A2:2; Station	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Eagle Rock - Cortina 115 kV (Highland to Highland)	P5-5C(DC)A2:2; Station	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor	
Eagle Rock - Cortina 115 kV (Highland to Highland)	P5-5A2:1; FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUND	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	111	<100	<100	<100	Continue to monitor	
EAGLE ROCK 115/60 KV BANK NO.1	P1-2A2:15; GEYSERS #3-CLOVERDALE 115KV [1650] MOAS OPENED C	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor	
EAGLE ROCK 115/60 KV BANK NO.1	P2-1A2:25; GEYSERS #3-CLOVERDALE 115KV [1650] (CLOVRDLE-AIDL	P2-1	Line Section w/o Fau	<100	<100	<100	<100	<100	<100	<100	<100	103	<100	<100	<100	Continue to monitor	
EAGLE ROCK 115/60 KV BANK NO.1	P2-3A2:25; AIDLINGYSR - 1D 115KV & MISSION POWER TAP LINE	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor	
EAGLE ROCK 115/60 KV BANK NO.1	P2-4A2:5; MENDOCNO 115KV - SECTION 1D & 2D	P2-4	Bus-Tie-Breaker														

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Study Area:

PG&amp;E North Coast &amp; North Bay

Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								2035 ATE	Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak		2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	
Fulton - Hopland 60 kV (Hopland Jct 60 kV to Cloverdale Jct 60 kV)	P2-4A2-8: FULTON 115KV - SECTION 2F & 1F	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	122	<100	<100	<100	Continue to monitor
Fulton - Hopland 60 kV (Hopland Jct 60 kV to Cloverdale Jct 60 kV)	P2-4A2-8: FULTON 115KV - SECTION 2F & 1F	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	122	<100	<100	<100	Continue to monitor
Fulton - Hopland 60 kV (Hopland Jct 60 kV to Cloverdale Jct 60 kV)	P2-4A2-8: FULTON 115KV - SECTION 2F & 1F	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	114	<100	<100	<100	Continue to monitor
Fulton - Hopland 60 kV (Hopland Jct 60 kV to Cloverdale Jct 60 kV)	P5-SaA2-9: FULTON BUS 115 KV 1 & 2 SECTION D (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	126	172	NConv	84	227	202	128	NConv	200	231	Install Redundant Relay
Fulton - Hopland 60 kV (Hopland Jct 60 kV to Cloverdale Jct 60 kV)	P5-SaA2-10: FULTON BUS 115 KV 1 & 2 SECTION E/F (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	112	170	NConv	82	253	226	NConv	NConv	222	254	Install Redundant Relay
Fulton - Hopland 60 kV (Hopland Jct 60 kV to Cloverdale Jct 60 kV)	P5-Sc(DC)A2-17: Station	P5	Non-Redundant Battery Supply	87	84	37	66	74	29	88	100	N/A	88	100	105	Install redundant battery supply
Fulton - Hopland 60 kV (Hopland Jct 60 kV to Cloverdale Jct 60 kV)	P5-Sc(DC)A6.5: Station	P5	Non-Redundant Battery Supply	87	84	37	66	74	29	88	100	N/A	88	100	105	Install redundant battery supply
Fulton - Hopland 60 kV (Hopland Jct 60 kV to Cloverdale Jct 60 kV)	EGLE ROCK-FULTON-SILVERDO 115KV [0] & FULTON 230/115KV TB 9	P6	N-1-1	100	<100	<100	<100	<100	<100	<100	<100	N/A	<100	<100	<100	Continue to monitor
Fulton - Hopland 60 kV (Hopland Jct 60 kV to Cloverdale Jct 60 kV)	EGLE ROCK-HOMSTKTP-CORTINA 115KV [0] & EGLE ROCK-FULTON-SILVERDO 115KV [0]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	N/A	<100	114	111	Continue to monitor
Fulton - Hopland 60 kV (Hopland Jct 60 kV to Cloverdale Jct 60 kV)	P7-1A2-5: GEYSERS #17-FULTON & EAGLE ROCK-FULTON-SILVERADO LINES	P7	DCTL	91	89	41	69	77	30	92	104	N/A	92	104	110	Continue to monitor
Fulton - Hopland 60 kV (Hopland Jct 60 kV to Cloverdale Jct 60 kV)	P7-1A2-6: GEYSERS #9-LAKEVILLE & EAGLE ROCK-FULTON-SILVERADO LINES	P7	DCTL	98	96	43	74	82	33	99	111	N/A	100	112	117	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	Base case	P0	Base Case	116	127	95	52	51	42	56	31	115	126	99	56	Review the power factor in near term base cases
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P1-2A6-12: SILVERDO-FULTON-EGLE ROCK 115KV [0]	P1	N-1	116	127	81	49	48	39	48	26	N/A	111	85	48	Review the power factor in near term base cases
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P1-3A2-26: FULTON 115/60KV TB 1	P1	N-1	116	127	81	49	48	39	48	26	N/A	111	85	48	Review the power factor in near term base cases
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P1-3A2-27: FULTON 115/60KV TB 2	P1	N-1	116	127	81	49	48	39	48	26	N/A	111	85	48	Review the power factor in near term base cases
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P1-3A2-2: FULTON 230/115KV TB 9	P1	N-1	116	127	85	49	48	39	48	26	104	111	85	48	Review the power factor in near term base cases
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P1-2A2-65: LAKEVILLE #1 60KV [7360]	P1	N-1	101	111	92	56	55	63	50	19	N/A	111	63	51	Review the power factor in near term base cases
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P1-2A2-66: LAKEVILLE #1 60KV [7360]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	142	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P1-2A2-66: LAKEVILLE #1 60KV [7360]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	124	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P1-2A2-2: FULTON-GEYSR16-GEYSR12-GEYSR14 230KV [0]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	110	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P1-2A2-32: CORONA-LAKEVILLE 115KV [4311]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	163	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P1-2A2-3: GEYSR18-LAKEVILLE-GEYSR20-GEYSR13 230KV [0] MOAS OPENED ON PETLMA A	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P2-1A2-3: GEYSERS #12-FULTON 230KV [4750] (CRIT13, 18-FULTON)	P2-1	Line Section w/o Fault	<100	<100	<100	<100	<100	<100	<100	<100	110	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P2-2A2-28: FULTON 115KV SECTION 1F	P2-2	Bus	116	127	81	49	48	39	48	26	N/A	111	85	48	Review the power factor in near term base cases
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P2-2A2-5: NCPA2 230KV SECTION 1D	P2-2	Bus	<100	<100	<100	<100	<100	<100	<100	<100	110	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P2-3A2-10: FULTON 230KV - MIDDLE BREAKER BAY 3	P2-3	Non-Bus Tie Breaker Fault	116	127	84	49	48	39	48	26	N/A	111	85	48	Review the power factor in near term base cases
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P2-3A2-12: FULTON 230KV - MIDDLE BREAKER BAY 8	P2-3	Non-Bus Tie Breaker Fault	116	127	85	49	48	39	48	26	N/A	111	85	48	Review the power factor in near term base cases
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P2-3A6-2: SILVERDO - 1E 115KV & SILVERDO-FULTON-EGLE ROCK LINE	P2-3	Non-Bus Tie Breaker Fault	116	127	81	49	48	39	48	26	N/A	111	85	48	Review the power factor in near term base cases
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P2-3A2-1: GEYSR12 - 1D 230KV & FULTON-GEYSR16-GEYSR12-GEYSR14 230KV [0]	P2-3	Non-Bus Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	110	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P2-3A2-3: GEYSR14 - 1D 230KV & FULTON-GEYSR16-GEYSR12-GEYSR14 230KV [0]	P2-3	Non-Bus Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	110	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P5-SaA2-1: FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	128	142	112	53	53	47	56	31	92	142	97	56	Install Redundant Relay
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P5-SaA2-2: FULTON 230 KV BAAH BUS #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	104	116	92	49	48	41	48	26	115	117	85	48	Install Redundant Relay
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P5-SaA2-5: SANTA ROSA 115 KV (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	116	107	79	49	48	39	48	26	N/A	126	85	48	Install Redundant Relay
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P5-Sc(DC)A2-17: Station	P5	Non-Redundant Battery Supply	116	127	81	49	48	39	48	26	101	111	85	48	Install redundant battery supply
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P5-Sc(DC)A2-2: Station	P5	Non-Redundant Battery Supply	111	128	NConv	49	48	48	48	26	NConv	130	85	48	Install redundant battery supply
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P5-Sc(DC)A6.5: Station	P5	Non-Redundant Battery Supply	116	127	81	49	48	39	48	26	N/A	111	85	48	Install redundant battery supply
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P5-SaA2-11: LAKEVILLE 115 KV BUS 1&2 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P5-SaA2-14: LAKEVILLE 230 KV BUS 1&2 SECTION E/F (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P5-SaA2-12: MENDOCINO 115 KV BUS 1&2 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	FULTON 230/115KV TB 4 & FULTON 230/115KV TB 9	P6	N-1-1	<100	<100	108	<100	<100	<100	<100	<100	N/A	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P7-1A2-11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	120	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P7-1A2-21: FULTON - HOPLAND 60 KV & GEYSER 12 - FULTON & GEYSER 17	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	118	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P7-1A2-17: GEYSER 12 - FULTON& GEYSER 17 - FULTON 230 KV LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	113	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P7-1A6-10: LAKEVILLE-SOBORANTE #2 & IGNACIO-SOBORANTE 230KV LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	106	<100	<100	<100	Continue to monitor
Fulton - Calistoga 60 kV (Fulton Sub 60 kV to St. Helena Jct 60 kV)	P7-1A6-17: IGNACIO-SOBORANTE 230KV & LAKEVILLE-SOBORANTE #2 230KV LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	105	<100	<100	<100	Continue to monitor
Fulton - Molino - Cotati 60 kV (Molino sub 60 kV to St. Helena Jct 60 kV)	P1-2A2-65: LAKEVILLE #2 60KV [7340] MOAS OPENED ON PETLMA A	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	109	<100	<100	<100	Continue to monitor
Fulton - Molino - Cotati 60 kV (Molino sub 60 kV to St. Helena Jct 60 kV)	P1-2A2-65: LAKEVILLE #2 60KV [7340] MOAS OPENED ON PETLMA A	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor
Fulton - Molino - Cotati 60 kV (Molino sub 60 kV to St. Helena Jct 60 kV)	P2-4A2-8: FULTON 115KV - SECTION 2F & 1F	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	246	<100	<100	<100	Continue to monitor
Fulton - Molino - Cotati 60 kV (Molino sub 60 kV to St. Helena Jct 60 kV)	P2-4A2-8: FULTON 115KV - SECTION 2F & 1F	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	230	<100	<100	<100	Continue to monitor
Fulton - Molino - Cotati 60 kV (Molino sub 60 kV to St. Helena Jct 60 kV)	P2-4A2-8: FULTON 115KV - SECTION 2F & 1F	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	226	<100	<10		

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)									2035 ATE	Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2024 SP High CEC Forecast		2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity		
Fulton-Molino-Cotati 60 kV(Molino sub 60 kV to Fulton-Molino-Cotati 60 kV)	P5-5(DC)A2.2: Station	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Fulton-Molino-Cotati 60 kV(Molino sub 60 kV to Fulton-Molino-Cotati 60 kV)	P5-5aA2.9: FULTON BUS 115 kV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	<100	240	<100	<100	<100	Continue to monitor
Fulton-Molino-Cotati 60 kV(Molino sub 60 kV to Fulton-Molino-Cotati 60 kV)	P5-5aA2.9: FULTON BUS 115 kV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	<100	223	<100	<100	<100	Continue to monitor
Fulton-Molino-Cotati 60 kV(Molino sub 60 kV to Fulton-Molino-Cotati 60 kV)	P5-5aA2.9: FULTON BUS 115 kV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	<100	222	<100	<100	<100	Continue to monitor
Fulton-Molino-Cotati 60 kV(Molino sub 60 kV to Fulton-Molino-Cotati 60 kV)	P5-5aA2.1: FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	<100	145	<100	<100	<100	Continue to monitor
Fulton-Molino-Cotati 60 kV(Molino sub 60 kV to Fulton-Molino-Cotati 60 kV)	P5-5aA2.1: FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	<100	130	<100	<100	<100	Continue to monitor
Fulton-Molino-Cotati 60 kV(Molino sub 60 kV to Fulton-Molino-Cotati 60 kV)	P5-5aA2.1: FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	<100	119	<100	<100	<100	Continue to monitor
Fulton-Molino-Cotati 60 kV(Molino sub 60 kV to Molino Jct 60 kV)	FULTON 230/115KV TB 9 & FULTON 230/115KV TB 4	P6	N-1-1	<100	<100	104	<100	<100	<100	<100	<100	<100	N/A	<100	<100	<100	Operating solution
Fulton-Pueblo 115 kV (FULTON 115KV to RINCO)	P5-5c(DC)A2.2: Station	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Fulton-Pueblo 115 kV (FULTON 115KV to RINCO)	P5-5c(DC)A2.2: Station	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Fulton-Santa Rosa No.1 115 kV (Fulton 115kv sub to Monoroe 1 115 kv Tap)	FULTON-SANTA ROSA #2 115KV [1630] & CORONA-LAKEVILLE 115KV [4311]	P6	N-1-1	116	123	160	<100	<100	114	<100	<100	<100	N/A	124	<100	<100	SPS, battery storage or line capacity increase
Fulton-Santa Rosa No.1 115 kV (Fulton 115kv sub to Monoroe 1 115 kv Tap)	CORONA-LAKEVILLE 115KV [4311] & FULTON-SANTA ROSA #1 115KV [1602]	P6	N-1-1	115	123	158	<100	<100	114	<100	<100	<100	N/A	124	<100	<100	SPS, battery storage or line capacity increase
Garberville-Laytonville 60kV line	P7-1A2.2: EAGLE ROCK-CORTINA & CORTINA-MENDOCINO #1 LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor
Geyser # 12 - Fulton 230 kV (Fulton - Geyser#14)	Base Case	Base P0		<100	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor
Geyser # 12 - Fulton 230 kV (Fulton - Geyser#14)	Base Case	Base P0		<100	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor
Geyser # 12 - Fulton 230 kV (Fulton - Geyser#14)	Base Case	Base P0		<100	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor
Geyser # 12 - Fulton 230 kV (Fulton - Geyser#14)	Base Case	Base P0		<100	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor
GEYSER # 3 - CLOVERDALE 115K (CLOVERDALE 115KV to MPE TAP115KV)	P2-4A2.5: MENDOCINO 115KV - SECTION 1D & 2D	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor
GEYSER # 3 - CLOVERDALE 115K (CLOVERDALE 115KV to MPE TAP115KV)	P7-1A2.23: EAGLE ROCK-REDBUD & CORTINA-MENDOCINO #1 LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	<100	145	<100	<100	<100	Continue to monitor
GEYSER # 3 - CLOVERDALE 115K (CLOVERDALE 115KV to MPE TAP115KV)	P7-1A2.4: MENDOCINO-REDBUD & CORTINA-MENDOCINO #1 LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor
GEYSER # 3 - CLOVERDALE 115K (CLOVERDALE 115KV to MPE TAP115KV)	EAGLE ROCK-REDBUD 115KV [1480] & CORTINA-MENDOCINO #1 115KV [1330] MOAS OPENED ON LUCERNA LUCERNE	P6	N-1-1	<100	<100	103	<100	<100	<100	<100	<100	<100	N/A	<100	<100	<100	Continue to monitor
GEYSER # 3 - CLOVERDALE 115K (CLOVERDALE 115KV to MPE TAP115KV)	P7-1A2.23: EAGLE ROCK-REDBUD & CORTINA-MENDOCINO #1 LINES	P7	DTCL	85	93	102	55	60	70	76	48	N/A	94	62	75	Continue to monitor	
Geyser#56-MPE Tap 115 kV	P7-1A2.23: EAGLE ROCK-REDBUD & CORTINA-MENDOCINO #1 LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	<100	128	<100	<100	<100	Continue to monitor
Geyser - Clear Lake 60KV	P2-4A2.5: MENDOCINO 115KV - SECTION 1D & 2D	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	<100	125	<100	<100	<100	Continue to monitor
Harley - Clear Lake 60KV	P5-SaA2.12: MENDOCINO 115 KV BUS 1&2 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	<100	125	<100	<100	<100	Continue to monitor
Harley - Clear Lake 60KV	P7-1A2.23: EAGLE ROCK-REDBUD & CORTINA-MENDOCINO #1 LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	<100	108	<100	<100	<100	Continue to monitor
HOPLAND BANK 115/60.00 BANK NO.2	P1-2A2.54: KONOCTI-EAGLE ROCK 60KV [8861]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	107	<100	<100	<100	Continue to monitor
HOPLAND BANK 115/60.00 BANK NO.2	P1-2A2.19: EGLE ROCK-FULTON-SILVERDO 115KV [0]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor
HOPLAND BANK 115/60.00 BANK NO.2	P1-2A6.12: SILVERDO-FULTON-EGLE ROCK 115KV [0]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor
HOPLAND BANK 115/60.00 BANK NO.2	P1-3A2.25: EGLE ROCK 115/60KV TB 1	P1-3	N-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	108	<100	<100	<100	Continue to monitor
HOPLAND BANK 115/60.00 BANK NO.2	P2-1A2.30: EAGLE ROCK-FULTON-SILVERADO 115KV [4392] (EGLE ROCK-FULTON-SILVERADO 115KV TO MPE TAP115KV)	P2-1	Line Section w/o Fault	<100	<100	<100	<100	<100	<100	<100	<100	<100	103	<100	<100	<100	Continue to monitor
HOPLAND BANK 115/60.00 BANK NO.2	P2-3A6.2: SILVERDO - 1E 115KV & SILVERDO-FULTON-EGLE ROCK LINE	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor
HOPLAND BANK 115/60.00 BANK NO.2	P2-3A2.31: FULTON - 2D 115KV & EGLE ROCK-FULTON-SILVERDO LINE	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor
HOPLAND BANK 115/60.00 BANK NO.2	P2-4A2.5: MENDOCINO 115KV - SECTION 1D & 2D	P2-4	Bus Tie Breaker Fault	90	98	95	88	96	105	94	65	114	99	78	92	Continue to monitor	
HOPLAND BANK 115/60.00 BANK NO.2	P2-4A2.8: FULTON 115KV - SECTION 2F & 1F	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	<100	142	<100	<100	<100	Continue to monitor
HOPLAND BANK 115/60.00 BANK NO.2	P5-5aA2.10: FULTON BUS 115 kV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	137	155	NConv	152	158	150	NConv	NConv	147	162	Install Redundant Relay	
HOPLAND BANK 115/60.00 BANK NO.2	P5-5aA2.12: MENDOCINO 115 KV BUS 1&2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	93	101	100	90	98	108	96	66	122	102	79	94	Install Redundant Relay	
HOPLAND BANK 115/60.00 BANK NO.2	P5-5aA2.9: FULTON BUS 115 kV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	154	158	NConv	154	158	149	151	NConv	148	163	Install Redundant Relay	
HOPLAND BANK 115/60.00 BANK NO.2	P5-5c(DC)A2.2: Station	P5	Non-Redundant Battery Supply	83	79	NConv	69	74	106	69	50	N/A	81	61	72	Install redudent battery supply	
HOPLAND BANK 115/60.00 BANK NO.2	P5-5c(DC)A2.17: Station	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor
HOPLAND BANK 115/60.00 BANK NO.2	P5-5c(DC)A6.5: Station	P5-5	Non-Redundant Rel	<100	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor
HOPLAND BANK 115/60.00 BANK NO.2	P7-1A2.6: GEYSERS #9-LAKEVILLE & EAGLE ROCK-FULTON-SILVERADO 115KV [4392]	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	<100	108	<100	<100	<100	Continue to monitor
HOPLAND BANK 115/60.00 BANK NO.2	P7-1A2.5: GEYSERS #17-FULTON & EAGLE ROCK-FULTON-SILVERADO 115KV [4392]	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	<100	105	<100	<100	<100	Continue to monitor
HOPLAND BANK 115/60.00 BANK NO.2	FULTON BUS 115 kV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	137	155	NConv	152	158	150	N/A	NConv	147	162	Maintenance project to increase capacity of Hopland Bank#2	
HOPLAND BANK 115/60.00 BANK NO.2	MENDOCINO-UKIAH 115KV [2420] MOAS OPENED ON MENDOCINO_CALPELLA & GEYSERS #3-CLOVERDALE 115KV [1650] MOAS OPENED ON AIDLINJECT_AIDLINGYSR	P6	N-1-1	123	134	157	<100	<100	107	106	<100	N/A	134	<100	106	Maintenance project to increase capacity of Hopland Bank#2	
IGNACIO 230/115.00 BANK # 4	P1-3A6.5: IGNACIO 230/115KV TB 6	P1-3	N-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	110</				

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2035 ATE	2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity			
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P2-2A2-5: NCPA2 230KV SECTION 1D	P2-2	Bus	<100	<100	<100	<100	<100	<100	<100	<100	133	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P2-3A2-1: GEYSR12 - 1D 230KV & FULTON-GEYSR16-GEYSR12-GEYSR14 LINE	P2-3	Non-Bus Tie Breaker Fault	75	79	104	31	29	41	43	10	133	80	48	43	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P2-3A2-9: FULTON 230KV - MIDDLE BREAKER BAY 7	P2-3	Non-Bus Tie Breaker Fault	75	79	104	31	29	41	43	10	133	80	48	43	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P2-3A2-4: GEYSR16 - 1D 230KV & FULTON-GEYSR16-GEYSR12-GEYSR14 LINE	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	133	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P2-3A2-3: GEYSR14 - 1D 230KV & FULTON-GEYSR16-GEYSR12-GEYSR14 LINE	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	109	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P2-3A2-4: GEYSR16 - 1D 230KV & FULTON-GEYSR16-GEYSR12-GEYSR14 LINE	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	109	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P2-4A2-3: LAKEVILLE 230KV - SECTION 2E & 2D	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	140	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P2-4A2-1: LAKEVILLE 230KV - SECTION 1E & 2E	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	138	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P2-4A2-2: LAKEVILLE 230KV - SECTION 1E & 1D	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	133	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P2-4A2-3: LAKEVILLE 230KV - SECTION 2E & 2D	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	114	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P2-4A2-1: LAKEVILLE 230KV - SECTION 1E & 2E	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	112	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P5-5aA2-10: FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	75	79	103	31	29	41	43	10	NConv	80	48	43	Install Redundant Relay		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P5-5aA2-14: LAKEVILLE 230 KV BUS 1&2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	75	79	105	31	29	41	43	10	138	80	48	43	Install Redundant Relay		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P5-5aA2-1: FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	75	79	104	31	29	41	43	10	142	80	48	43	Install Redundant Relay		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P5-5aA2-2: FULTON 230 KV BAAH BUS #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	75	79	105	31	29	41	43	10	133	80	48	43	Install Redundant Relay		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P5-5c(DC)A2-1: Station	P5	Non-Redundant Battery Supply	75	81	106	31	29	41	43	10	139	82	48	43	Install redundant battery supply		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P5-5aA2-13: LAKEVILLE 230 KV BUS 1&2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	129	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P5-5aA2-13: LAKEVILLE 230 KV BUS 1&2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	105	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P7-1A2-11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	144	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P7-1A6-10: LAKEVILLE-SOBRANTE #2 & IGNACIO-SOBRANTE 230KV LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	140	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P7-1A6-2: LAKEVILLE-IGNACIO #1 & IGNACIO-SOBRANTE LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	137	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P7-1A2-21: FULTON - HOPLAND 60 KV & GEYSER 12 - FULTON & GEYSER 17 - FULTON 230 KV LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	137	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P7-1A6-17: IGNACIO-SOBRANTE 230KV & LAKEVILLE-SOBRANTE #2 230KV LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	137	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P7-1A2-17: GEYSER 12 - FULTON& GEYSER 17 - FULTON 230 KV LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	135	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P7-1A2-11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	117	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P7-1A6-10: LAKEVILLE-SOBRANTE #2 & IGNACIO-SOBRANTE 230KV LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	114	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P7-1A6-2: LAKEVILLE-IGNACIO #1 & IGNACIO-SOBRANTE LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	112	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P7-1A2-21: FULTON - HOPLAND 60 KV & GEYSER 12 - FULTON & GEYSER 17 - FULTON 230 KV LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	112	<100	<100	<100	Continue to monitor		
Ignacio - Mare Island No 2 (Ignacio sub to Hamilton Wetlands sub)	P7-1A2-17: GEYSER 12 - FULTON& GEYSER 17 - FULTON 230 KV LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	110	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	Base Case	Base	P0	<100	<100	<100	<100	<100	<100	<100	<100	115	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	Base Case	Base	P0	<100	<100	<100	<100	<100	<100	<100	<100	115	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	Base Case	Base	P0	<100	<100	<100	<100	<100	<100	<100	<100	115	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	Base Case	Base	P0	<100	<100	<100	<100	<100	<100	<100	<100	115	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P1-2A2-2: FULTON-GEYSR16-GEYSR12-GEYSR14 230KV [0]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	108	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P1-2A6-6: IGNACIO-SOBRANTE 230KV [4920]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	107	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P1-2A2-3: GEYSR18-LAKEVILLE-GEYSR20-GEYSR13 230KV [0] MOAS OPENED ON	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	106	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P1-2A6-11: TULUCAV-VACA 230KV [5800]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P1-3A6-5: IGNACIO 230/115KV TB 6	P1-3	N-1	<100	<100	<100	<100	<100	<100	<100	<100	110	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P2-1A2-3: GEYSERS #12-FULTON 230KV [4750] (CR173, 18-FULTON)	P2-1	Line Section w/o Fault	<100	<100	<100	<100	<100	<100	<100	<100	108	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P2-2A2-5: NCPA2 230KV SECTION 1D	P2-2	Bus	<100	<100	<100	<100	<100	<100	<100	<100	108	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P2-3A2-1: GEYSR12 - 1D 230KV & FULTON-GEYSR16-GEYSR12-GEYSR14 LINE	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	108	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P2-4A2-3: LAKEVILLE 230KV - SECTION 2E & 2D	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	114	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P2-4A2-1: LAKEVILLE 230KV - SECTION 1E & 2E	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	112	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P5-5aA2-1: FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	115	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P5-5c(DC)A2-1: Station	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	113	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P5-5aA2-14: LAKEVILLE 230 KV BUS 1&2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	112	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P5-5aA2-2: FULTON 230 KV BAAH BUS #2 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	108	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs Island 115KV Line No 1	P5-5aA2-13: LAKEVILLE 230 KV BUS 1&2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	105	<100	<100	<100	Continue to monitor		
Ignacio - Skaggs																		

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2035 ATE	2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity			
Konocti - Eagle Rock 60kV	P2-3-A2-66: GEYSERS34 115KV - RING R2 & R3	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	<100	110	<100	<100	<100	Continue to monitor	
Konocti - Eagle Rock 60kV	P2-3-A2-65: GEYSERS34 115KV - RING R2 & R1	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	<100	110	<100	<100	<100	Continue to monitor	
Konocti - Eagle Rock 60kV	P2-3-A2-23: CLOVRDLE - 1D 115KV & UKIAH-HOPLAND-CLOVERDALE LINE	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	<100	110	<100	<100	<100	Continue to monitor	
Konocti - Eagle Rock 60kV	P2-3-A2-21: UKIAH - 1E 115KV & UKIAH-HOPLAND-CLOVERDALE LINE	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	<100	108	<100	<100	<100	Continue to monitor	
Konocti - Eagle Rock 60kV	P2-4-A2-5: MENDOCINO 115KV - SECTION 1D & 2D	P2-4	Bus Tie Breaker Fault	83	104	99	63	69	78	80	42	128	105	66	80	Review Project: Clear Lake 60 kV System Reinforcement		
Konocti - Eagle Rock 60kV	P5-Sa-A2-12: MENDOCINO 115 KV BUS 1&2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	82	104	98	63	69	78	79	42	127	105	66	79	Install Redundant Relay		
Konocti - Eagle Rock 60kV	P5-Sa-A2-9: FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	99	66	NConv	66	81	50	109	NConv	72	81	Install Redundant Relay		
Konocti - Eagle Rock 60kV	P5-Sa-A2-10: FULTON BUS 115 KV 1 & 2 SECTION E(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	94	63	NConv	62	77	48	NConv	NConv	69	77	Install Redundant Relay		
Konocti - Eagle Rock 60kV	P5-Sc(DC)A2-6: Station	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	109	<100	<100	<100	Continue to monitor		
Konocti - Eagle Rock 60kV	P5-Sa-A2-3: CLOVERDALE 115 KV(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	109	<100	<100	<100	Continue to monitor		
Konocti - Eagle Rock 60kV	GEYSERS #3-CLOVERDALE 115KV [1650] MOAS OPENED ON AIDINJUNCT_AIDLINGYSR & EAGLE ROCK-REDBUD 115KV [1480]	P6	N-1-1	120	118	141	<100	<100	<100	<100	<100	N/A	119	<100	<100	Review Project: Clear Lake 60 kV System Reinforcement		
Konocti - Eagle Rock 60kV	P7-1-A2-23: EAGLE ROCK-REDBUD & CORTINA-MENDOCINO #1 LINES	P7	DCTL	92	97	108	61	63	69	76	41	129	98	<100	<100	Review Project: Clear Lake 60 kV System Reinforcement		
Konocti - Eagle Rock 60kV	P7-1-A2-4: MENDOCINO-REDBUD & CORTINA-MENDOCINO #1 LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	113	<100	<100	<100	Continue to monitor		
Konocti - Eagle Rock 60kV	P7-1-A2-14: MENDOCINO-UKIAH & UKIAH-HOPLAND-CLOVERDALE LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor		
Konocti - Eagle Rock 60kV	P7-1-A2-3: EAGLE ROCK-CORTINA & EAGLE ROCK-REDBUD LINES (2)	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	101	<100	<100	<100	Continue to monitor		
Lakeville - Ignacio #2 230kV	P7-1-A6-2: LAKEVILLE-IGNACIO #1 & IGNACIO-SOBRANTE LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	118	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P1-2-A2-2: FULTON-GEYSR16-GEYSR12-GEYSR14 230KV [0]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	107	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P2-1-A2-3: GEYSERS #12-FULTON 230KV [4750] (CRIT3, 18-FULTON)	P2-1	Line Section w/o Fault	<100	<100	<100	<100	<100	<100	<100	<100	107	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P2-3-A2-1: GEYSR12 - 1D 230KV & FULTON-GEYSR16-GEYSR12-GEYSR14	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	107	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P2-3-A2-3: GEYSR14 - 1D 230KV & FULTON-GEYSR16-GEYSR12-GEYSR14	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	107	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P2-4-A2-8: FULTON 115KV - SECTION 2F & 1F	P2-4	Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	367	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P2-4-A2-11: LAKEVILLE 115KV - SECTION 1D & 2D	P2-4	Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	113	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P5-Sa-A2-10: FULTON BUS 115 KV 1 & 2 SECTION E(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P5-Sc(DC)A2-2: Station	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P5-Sa-A2-9: FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	359	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P5-Sa-A2-1: FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	278	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P5-Sa-A2-2: FULTON 230 KV BAAH BUS #2 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	126	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P7-1-A2-21: FULTON - HOPLAND 60 KV & GEYSER 12 - FULTON & GEYSER 12 - FULTON	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	119	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P7-1-A2-17: GEYSER 12 - FULTON& GEYSER 17 - FULTON 230 KV LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	112	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P7-1-A2-10: FULTON-IGNACIO #1 & FULTON-LAKEVILLE LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	105	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P7-1-A2-11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 80kV	P7-1-A2-2: EAGLE ROCK-CORTINA & CORTINA-MENDOCINO #1 LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	100	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 60 kV (Petalinga Jct 60 kV to Petalinga A)	P1-2-A2-64: LAKEVILLE-PETALUMA C 60KV [7350]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	116	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 60 kV (Petalinga Jct 60 kV to Petalinga A)	P1-2-A2-64: LAKEVILLE-PETALUMA C 60KV [7350]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	116	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 60 kV (Petalinga Jct 60 kV to Petalinga A)	P2-4-A2-8: FULTON 115KV - SECTION 2F & 1F	P2-4	Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	247	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 60 kV (Petalinga Jct 60 kV to Petalinga A)	P2-4-A2-8: FULTON 115KV - SECTION 2F & 1F	P2-4	Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	241	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 60 kV (Petalinga Jct 60 kV to Petalinga A)	P2-4-A2-8: FULTON 115KV - SECTION 2F & 1F	P2-4	Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	167	<100	<100	<100	Continue to monitor		
LAKEVILLE #2 60 kV (Petalinga Jct 60 kV to Petalinga A)	P5-Sc(DC)A2-2: Station	P5	Non-Redundant Battery Supply	N/A	N/A	NConv	N/A	N/A	102	N/A	N/A	N/A	N/A	N/A	N/A	Install redundant battery supply		
LAKEVILLE #2 60 kV (Petalinga Jct 60 kV to Petalinga A)	P5-Sa-A2-1: FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	122	NConv	NConv	70	NConv	NConv	187	NConv	NConv	NConv	Install Redundant Relay		
LAKEVILLE #2 60 kV (Petalinga Jct 60 kV to Petalinga A)	P5-Sa-A2-9: FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	225	NConv	NConv	155	NConv	NConv	242	NConv	NConv	NConv	Install Redundant Relay		
LAKEVILLE #2 60 kV (Petalinga Jct 60 kV to Petalinga A)	P5-Sa-A2-10: FULTON BUS 115 KV 1 & 2 SECTION E(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	5	5	156	2	2	104	2	1	NConv	5	4	2	Install Redundant Relay		
LAKEVILLE 230/60 KV Bank # 3	P1-3-A2-6: LAKEVILLE 230/60KV TB 5	P1-3	N-1	<100	<100	<100	<100	<100	<100	<100	<100	107	<100	<100	<100	Continue to monitor		
LAKEVILLE 230/60 KV Bank # 3	P2-2-A2-14: LAKEVILLE 230KV SECTION 1D	P2-2	Bus	<100	<100	<100	<100	<100	<100	<100	<100	109	<100	<100	<100	Continue to monitor		
LAKEVILLE 230/60 KV Bank # 3	P2-4-A2-2: LAKEVILLE 230KV - SECTION 1E & 1D	P2-4	Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	112	<100	<100	<100	Continue to monitor		
LAKEVILLE 230/60 KV Bank # 3	P2-4-A2-4: LAKEVILLE 230KV - SECTION 2D & 1D	P2-4	Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	109	<100	<100	<100	Continue to monitor		
LAKEVILLE 230/60 KV Bank # 3	P2-4-A2-8: FULTON 115KV - SECTION 2F & 1F	P2-4	Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor		
LAKEVILLE 230/60 KV Bank # 3	P5-Sa-A2-10: FULTON BUS 115 KV 1 & 2 SECTION E(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor		
LAKEVILLE 230/60 KV Bank # 3	P5-Sa-A2-14: LAKEVILLE 230 KV BUS 1&2 SECTION E(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	111	<100	<100	<100	Continue to monitor		
LAKEVILLE 230/60 KV Bank # 3	P5-Sa-A2-9: FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor		
Mendocino - Philo Jct - Hopland 60 kV(Mendocino Sub 60kV to UKIAH JT 60kV)	P2-4-A2-5: MENDOCINO 115KV - SECTION 1D & 2D	P2-4	Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	151	<100	<100	<100	Continue to monitor		
Mendocino - Philo Jct - Hopland 60 kV(Mendocino Sub 60kV to UKIAH JT 60kV)	P5-Sa-A2-12: MENDOCINO 115 KV BUS 1&2 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	152	<100	<100	<100	Continue to monitor		
Mendocino - Philo Jct - Hopland 60 kV(Mendocino Sub 60kV to UKIAH JT 60kV)	P7-1-A2-23: EAGLE ROCK-REDBUD & CORTINA-MENDOCINO #1 LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	107	<100	<100	<100	Continue to monitor		
Mendocino - Philo Jct - Hopland 60 kV(Mendocino Sub 60kV to UKIAH JT 60kV)	P5-Sa-A2-10: FULTON BUS 115 KV 1 & 2 SECTION E(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	73	35	NConv	44	52	41	N/A	NConv	43	52	Install Redundant Relay		
Mendocino - Philo Jct - Hopland 60 kV(Mendocino Sub 60kV to UKIAH JT 60kV)	MENDOCINO-UKIAH 115KV [2420] MOAS OPENED ON MENDOCINO_CALPELLA & GEYSERS #3-CLOVERDALE 115KV [1650] MOAS OPENED ON AIDINJUNCT_AIDLINGYSR	P6	N-1-1	104	124	146	<100	<100	<100	<100	<100	N/A	125	<100	<100	Operating solution		
Mendocino - Clearlake 60 kV (Mendocino Sub 60 kV to Upper Lake Sub 60 kV)	P1-2-A2-54: KONCOT-EAGLE ROCK 60KV [6861]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	115	<100	<100	<100	Continue to monitor		
Mendocino - Clearlake 60 kV (Mendocino Sub 60 kV to Upper Lake Sub 60 kV)	P1-3-A2-25: EGLE RCK 115/60KV TB 1	P1-3	N-1	<100	<100	<100	<100	<100	<100	<100	<100	115	<100	<100	<100	Continue to monitor		
Mendocino - Clearlake 60 kV (Mendocino Sub 60 kV to Upper Lake Sub 60 kV)	P2-2-A2-21: EGLE RCK 115KV SECTION MA	P2-2	Bus	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor		
Mendocino - Clearlake 60 kV (Mendocino Sub 60 kV to Upper Lake Sub 60 kV)	P2-2-A2-21: EGLE RCK 115KV SECTION MA	P2-2	Bus	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor		
Mendocino - Clearlake 60 kV (Mendocino Sub 60 kV to Upper Lake Sub 60 kV)	EGLE RCK - MA 115KV & EGLE RCK-HOMSTKTP-CORTINA LINE	P2-3	Non-Bus Tie Breaker Fault	<100	<100	NConv	<100	<100	<100	<100	<100	N/A	<100	<100	<100	Continue to monitor		
Mendocino - Clearlake 60 kV (Mendocino Sub 60 kV to Upper Lake Sub 60 kV)	P2-3-A2-26: EGLE RCK - MA 115KV & EGLE RCK-FULTON-SILVERDO LINES	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor		
Mendocino - Clearlake 60 kV (Mendocino Sub 60 kV to Upper Lake Sub 60 kV)	P2-3-A2-27: EGLE RCK - MA 115KV & EAGLE ROCK-REDBUD LINE																	



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								2035 ATE	Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak		2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	
Mendocino -Clearlake 60 kV (Mendocino Sub 60)	P2-3-A2-28: EGLE ROCK - MA 115KV & EGLE ROCK-HOMSTKTP-CORTINA	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Mendocino -Clearlake 60 kV (Mendocino Sub 60)	P5-5a-A2-8: EAGLE ROCK 115KV/FAILURE OF NON-REDUNDANT RELAY	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Mendocino -Clearlake 60 kV (Mendocino Sub 60)	P5-5c(DC)A2-8: Station	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Mendocino -Clearlake 60 kV (Mendocino Sub 60)	P5-5a-A2-8: EAGLE ROCK 115KV/FAILURE OF NON-REDUNDANT RELAY	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Mendocino -Clearlake 60 kV (Mendocino Sub 60)	P5-5c(DC)A2-8: Station	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Mendocino -Clearlake 60 kV (Mendocino Sub 60)	P5-5d-A2.1: P5-5d: No BF Relay Eagle Rock 115KV CB 142	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	113	<100	<100	<100	Continue to monitor
Monte Rio- Fulton 60 KV(Molino Back Tie)	P1-2-A2-59: FULTON-MOLINO-COTATI 60KV [6910] MOAS OPENED ON	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	108	<100	<100	<100	Continue to monitor
Monte Rio- Fulton 60 KV(Molino Back Tie)	P7-1-A2-12: FULTON-SANTA ROSA #1 & FULTON-MOLINO-COTATI LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	108	<100	<100	<100	Continue to monitor
Monte Rio- Fulton 60 KV(Wohler Jct 60 Kv to Monte Rio)	P1-2-A2-59: FULTON-MOLINO-COTATI 60KV [6910] MOAS OPENED ON	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	110	<100	<100	<100	Continue to monitor
Monte Rio- Fulton 60 KV(Wohler Jct 60 Kv to Monte Rio)	P1-2-A2-59: FULTON-MOLINO-COTATI 60KV [6910] MOAS OPENED ON	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	109	<100	<100	<100	Continue to monitor
Monte Rio- Fulton 60 KV(Wohler Jct 60 Kv to Monte Rio)	P7-1-A2-12: FULTON-SANTA ROSA #1 & FULTON-MOLINO-COTATI LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	110	<100	<100	<100	Continue to monitor
Monte Rio- Fulton 60 KV(Wohler Jct 60 Kv to Monte Rio)	P7-1-A2-12: FULTON-SANTA ROSA #1 & FULTON-MOLINO-COTATI LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	109	<100	<100	<100	Continue to monitor
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P2-4-A2-7: FULTON 115KV - SECTION 2D & 1D	P2-4	Bus Tie Breaker Fault	117	125	162	76	87	114	79	55	194	126	80	79	SPS, battery storage or line capacity increase
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P5-5a-A2-1: FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	111	118	140	65	78	103	72	27	209	119	57	68	Install Redundant Relay
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P5-5c(DC)A2-1: Station	P5	Non-Redundant Battery Supply	116	124	158	76	86	114	79	54	229	125	79	80	Install redundant battery supply
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P5-5a-A2-10: FULTON BUS 115 KV 1 & 2 SECTION E/(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	158	76	NConv	114	80	55	NConv	NConv	80	80	Install Redundant Relay
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P5-5a-A2-9: FULTON BUS 115 KV 1 & 2 SECTION D/(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	125	<100	<100	<100	Continue to monitor
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P5-5a-A2-9: FULTON BUS 115 KV 1 & 2 SECTION D/(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	113	<100	<100	<100	Continue to monitor
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	FULTON-SANTA ROSA #2 115KV [1630] & FULTON-SANTA ROSA #1 115KV [1620]	P6	N-1-1	117	125	162	<100	<100	114	<100	<100	N/A	126	<100	<100	SPS, battery storage or line capacity increase
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P7-1-A2-15: FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINES	P7	DTCL	117	125	162	<100	86	114	<100	<100	192	126	<100	<100	SPS, battery storage or line capacity increase
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P2-4-A2-7: FULTON 115KV - SECTION 2D & 1D	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	141	<100	<100	<100	Continue to monitor
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P2-4-A2-7: FULTON 115KV - SECTION 2D & 1D	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	137	<100	<100	<100	Continue to monitor
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P5-5a-A2-10: FULTON BUS 115 KV 1 & 2 SECTION E/(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P5-5a-A2-10: FULTON BUS 115 KV 1 & 2 SECTION E/(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	NConv	<100	<100	<100	Continue to monitor
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P5-5c(DC)A2-1: Station	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	167	<100	<100	<100	Continue to monitor
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P5-5c(DC)A2-1: Station	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	163	<100	<100	<100	Continue to monitor
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P5-5a-A2-1: FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	145	<100	<100	<100	Continue to monitor
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P5-5a-A2-1: FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	141	<100	<100	<100	Continue to monitor
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P7-1-A2-15: FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	139	<100	<100	<100	Continue to monitor
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Pennygrove Sub 115 kv)	P7-1-A2-15: FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINE	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	135	<100	<100	<100	Continue to monitor
Sonoma - Pueblo 115 kv	P5-5a-A2-1: FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	131	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	Base case	P0	Base Case	124	78	89	53	51	60	81	41	100	78	99	82	Operating solution
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-2-A6-68: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULUCY_JT_GRD-JCT	P1	N-1	133	97	111	62	63	74	<100	50	N/A	97	105	88	Review project: Tulucay - Napa #2 60 kV Capacity Increase
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-2-A6-22: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULUCAY1_TULUCY_JT	P1	N-1	136	99	113	64	65	76	89	51	N/A	98	108	91	Review project: Tulucay - Napa #2 60 kV Capacity Increase
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-2-A6-24: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULUCY_JT_GRD-JCT	P1	N-1	133	97	111	62	63	74	87	50	N/A	97	105	88	Review project: Tulucay - Napa #2 60 kV Capacity Increase
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-2-A2-66: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULUCAY1_TULUCY_JT	P1	N-1	136	99	113	64	65	76	89	51	N/A	98	108	91	Review project: Tulucay - Napa #2 60 kV Capacity Increase
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-2-A2-67: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULUCAY1_TULUCY_JT	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	128	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-2-A6-23: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULUCAY1_TULUCY_JT	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	128	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-2-A2-69: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULUCAY1_TULUCY_JT	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	126	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-2-A6-25: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULUCAY1_TULUCY_JT	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	126	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-2-A6-1: TULUCAY-VACA 230KV [5800]	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-2-A2-67: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULUCAY1_TULUCY_JT	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	103	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-2-A6-23: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULUCAY1_TULUCY_JT	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	103	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-2-A2-69: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULUCAY1_TULUCY_JT	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	100	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-2-A6-25: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULUCAY1_TULUCY_JT	P1-2	N-1	<100	<100	<100	<100	<100	<100	<100	<100	100	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P2-1-A6-1: TULUCAY-VACA 230KV [5800] (TULUCAY-TLCYVACARCTR)	P2-1	Line Section w/o Fault	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P2-2-A2-12: LAKEVILLE 230KV SECTION 2E	P2-2	Bus	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P2-3-A2-16: LAKEVILLE - 2E 230KV & FULTON-LAKEVILLE LINE	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P2-3-A2-15: LAKEVILLE - 2E 230KV & GEYSER18-LAKEVILLE-GEYSER20-GEYSER21	P2-3	Non-Bus-Tie Breaker	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P2-4-A2-1: LAKEVILLE 230KV - SECTION 1E & 2E	P2-4	Bus-Tie-Breaker	<100	<100	<100	<100	<100	<100	<100	<100	107	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-1-A2-12: GEYSER17 13.80KV GEN UNIT 1 & P1-2-A2-67: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULUCAY1_TULUCY_JT	P3	G-1/N-1	<100	<100	114	<100	<100	<100	<100	<100	N/A	<100	<100	<100	Review project: Tulucay - Napa #2 60 kV Capacity Increase
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P1-1-A2-14: GEYSER20 13.80KV GEN UNIT 1 & P1-2-A2-66: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULUCAY1_TULUCY_JT	P3	G-1/N-1	136	<100	<100	<100	<100	<100	<100	<100	N/A	<100	<100	<100	Project: Tulucay - Napa #2 60 kV Capacity Increase
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P5-5a-A2-1: FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	109	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P5-5a-A2-14: LAKEVILLE 230 KV BUS 1&2 SECTION E/(FAILURE OF NON-REDUNDANT RELAY)	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	107	<100	<100	<100	Continue to monitor
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	P5-5c(DC)A2-1: Station	P5-5	Non-Redundant Relay	<100	<100	<100	<100	<100	<100	<100	<100	107	<100	<100	<100	Continue to monitor

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								2035 ATE	Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak		2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	
Tulucay - Vaca 230 kV	P5-5a:A2:14; LAKEVILLE 230 kV BUS 1&2 SECTION E(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	103	109	98	<100	<100	<100	<100	<100	123	112	95	107	Project: Vaca Dixon-Lakeville 230 kV corridor series compensation
Tulucay - Vaca 230 kV	VACA-LAKEVILLE #1 230KV [5840] & GEYSR18-LAKEVILLE-GEYSR20-GEYSR13 230KV [0] MOAS OPENED ON G13TT1_8_SANTAFE	P6	N-1-1	102	<100	<100	<100	<100	<100	<100	<100	N/A	<100	<100	<100	Project: Vaca Dixon-Lakeville 230 kV corridor series compensation
Tulucay - Vaca 230 kV	P7-1:A2:11; GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	112	<100	<100	<100	Continue to monitor
Tulucay - Vaca 230 kV	P7-1:A6:10; LAKEVILLE-SOBRANTE #2 & IGNACIO-SOBRANTE 230KV L	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	110	<100	<100	<100	Continue to monitor
Tulucay - Vaca 230 kV	P7-1:A6:17; IGNACIO-SOBRANTE 230KV & LAKEVILLE-SOBRANTE #2 Z	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	106	<100	<100	<100	Continue to monitor
Ukiah-Hopland-Cloverdale 115 kV (Ukiah sub 115)	P7-1:A2:23; EAGLE ROCK -REDBUD & CORTINA-MENDOCINO #1 LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	128	<100	<100	<100	Continue to monitor
Ukiah-Hopland-Cloverdale 115 kV (Ukiah sub 115)	P7-1:A2:23; EAGLE ROCK -REDBUD & CORTINA-MENDOCINO #1 LINES	P7-1	DTCL	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	Continue to monitor
Vaca-Lakeville #1 230kv	GEYSR18-LAKEVILLE-GEYSR20-GEYSR13 230KV [0] MOAS OPENED ON G13TT1_8_SANTAFE & TULUCAY-VACA 230KV [5800]	P6	N-1-1	<100	106	<100	<100	<100	<100	<100	<100	N/A	108	<100	<100	Project: Vaca Dixon-Lakeville 230 kV corridor series compensation
Vaca-Vacaville-Jameson-North Tower 115 kV Line	P2-2:A6:16; NRTH TWR 115KV SECTION 1E	P2-2	Bus	109	108	56	82	88	33	119	106	N/A	112	152	154	Project: North Tower 115kV Looping project
Vaca-Vacaville-Jameson-North Tower 115 kV Line	P2-2:A6:18; NRTH TWR 115KV SECTION 1G	P2-2	Bus	109	108	56	82	88	33	119	106	N/A	112	152	154	Project: North Tower 115kV Looping project
Vaca-Vacaville-Jameson-North Tower 115 kV Line	P2-4:A6:5; NRTH TWR 115KV - SECTION 1E & 1F	P2-4	Bus Tie Breaker Fault	109	108	56	82	88	33	119	106	N/A	112	152	154	Project: North Tower 115kV Looping project
Vaca-Vacaville-Jameson-North Tower 115 kV Line	P2-4:A6:6; NRTH TWR 115KV - SECTION 1F & 1G	P2-4	Bus Tie Breaker Fault	109	108	56	82	88	33	119	106	N/A	112	152	154	Project: North Tower 115kV Looping project

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)								2035 ATE	Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak		2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	
MENDOCNO 115 kV	Basecase	P0	Base Case	High	1.05	<1.05	<1.05	1.06	1.05	<1.05	1.05	1.05	N/A	<1.05	<1.05	<1.05	System adjustments or voltage support if needed
CALPELLA 115 kV	Basecase	P0	Base Case	High	1.05	<1.05	<1.05	1.06	1.05	<1.05	1.05	1.05	N/A	<1.05	<1.05	<1.05	System adjustments or voltage support if needed
HPLND JT 115 kV	Basecase	P0	Base Case	High	<1.05	<1.05	<1.05	1.05	<1.05	<1.05	<1.05	1.05	N/A	<1.05	<1.05	<1.05	System adjustments or voltage support if needed
LUCERNE 115 kV	Basecase	P0	Base Case	High	<1.05	<1.05	<1.05	1.05	<1.05	<1.05	<1.05	1.05	N/A	<1.05	<1.05	<1.05	System adjustments or voltage support if needed
INDIN VL 115 kV	Basecase	P0	Base Case	High	<1.05	<1.05	<1.05	1.05	<1.05	<1.05	<1.05	<1.05	N/A	<1.05	<1.05	<1.05	System adjustments or voltage support if needed
FRT BRGG 60 kV	Basecase	P0	Base Case	High	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	N/A	<1.05	1.05	<1.05	System adjustments or voltage support if needed
BIG RIVR 60 kV	Basecase	P0	Base Case	High	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	N/A	<1.05	1.07	<1.05	System adjustments or voltage support if needed
ELK 60 kV	Basecase	P0	Base Case	High	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	N/A	<1.05	1.06	<1.05	System adjustments or voltage support if needed
PNT ARNA 60 kV	Basecase	P0	Base Case	High	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	N/A	<1.05	1.05	<1.05	System adjustments or voltage support if needed
GARCIA 60 kV	Basecase	P0	Base Case	High	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	N/A	<1.05	1.06	<1.05	System adjustments or voltage support if needed
MLNO JCT 60 kV	Basecase	P0	Base Case	High	<1.05	<1.05	<1.05	<1.05	<1.05	<1.05	1.05	1.05	N/A	<1.05	<1.05	<1.05	System adjustments or voltage support if needed
CALISTGA 60 kV	Basecase	P0	Base Case	Low	0.82	0.79	0.90	0.89	0.90	>0.9	>0.9	>0.9	N/A	0.80	0.85	>0.9	Voltage support
PENNGRVE 115 kV	P1-2:A2:32:_CORONA-LAKEVILLE 115KV [4311]	P1	N-1	Low	0.97	0.97	0.90	1.00	0.99	0.93	1.05	1.04	0.86	0.97	0.99	1.04	Continue to monitor
CORONA 115 kV	P1-2:A2:32:_CORONA-LAKEVILLE 115KV [4311]	P1	N-1	Low	0.97	0.96	0.90	0.99	0.98	0.93	1.05	1.04	0.85	0.96	0.99	1.04	Continue to monitor
LYTNVLE 60 kV	P1-2:A2:43:_LAYTONVILLE-WILLITS 60KV [8360]	P1	N-1	Low	0.99	0.99	0.79	0.71	0.62	0.49	1.02	1.04	0.59	0.99	0.99	1.01	Continue to monitor
COVELO6 60 kV	P1-2:A2:43:_LAYTONVILLE-WILLITS 60KV [8360]	P1	N-1	Low	0.99	0.98	0.78	0.70	0.61	0.49	1.01	1.04	0.57	0.98	0.99	1.01	Continue to monitor
HARTLEY 60 kV	P1-3:A2:25:_EGLE RCK 115/60KV TB 1	P1	N-1	Low	0.98	0.95	0.90	0.98	0.96	0.93	0.98	1.02	0.87	0.95	0.98	0.98	Continue to monitor
CLER LKE 60 kV	P1-2:A2:54:_KONOCTI-EAGLE ROCK 60KV [6861]	P1	N-1	Low	0.98	0.95	0.89	0.97	0.96	0.92	0.98	1.01	0.87	0.95	0.97	0.97	Continue to monitor
KONOCTI6 60 kV	P1-2:A2:54:_KONOCTI-EAGLE ROCK 60KV [6861]	P1	N-1	Low	0.96	0.95	0.88	0.95	0.94	0.90	0.95	1.02	0.84	0.96	0.94	0.95	Continue to monitor
LOWR LKE 60 kV	P1-2:A2:54:_KONOCTI-EAGLE ROCK 60KV [6861]	P1	N-1	Low	0.96	0.97	0.89	0.94	0.94	0.91	0.95	1.03	0.86	0.97	0.93	0.94	Continue to monitor
EGLE RCK 60 kV	P1-3:A2:25:_EGLE RCK 115/60KV TB 1	P1	N-1	Low	0.96	0.96	0.88	0.95	0.94	0.90	0.95	1.02	0.84	0.96	0.94	0.95	Continue to monitor
GUALALA 60 kV	P1-3:A2:2:_FULTON 230/115KV TB 9	P1	N-1	Low	1.00	0.99	0.88	1.00	0.99	0.92	1.01	1.05	0.81	0.99	1.03	1.01	Continue to monitor
PUEBLO 115 kV	P1-2:A2:35:_SONOMA-PUEBLO 115KV [3810]	P1	N-1	Low	0.90	0.90	0.96	0.99	0.99	0.90	1.03	1.03	N/A	0.90	0.94	1.02	Review the power factor in near term base cases
HIGHWAY 115 kV	P1-3:A6:5:_IGNACIO 230/115KV TB 6	P1	N-1	Low	0.93	0.92	0.86	0.99	0.99	0.93	0.98	1.02	0.80	0.92	0.95	0.98	Continue to monitor
NTWR ALT 115 kV	P1-3:A6:5:_IGNACIO 230/115KV TB 6	P1	N-1	Low	0.93	0.92	0.86	0.99	0.98	0.93	0.98	1.02	0.80	0.92	0.94	0.98	Continue to monitor
CALISTGA 60 kV	P1-1:A2:10:_GEYSER14 13.80KV GEN UNIT 1	P1	N-1	Low	0.82	0.78	0.89	0.89	0.90	0.96	0.96	1.03	N/A	0.79	0.85	0.95	Voltage support
MONROE1 115 kV	P2-4:A2:7:_FULTON 115KV - SECTION 2D & 1D	P2-4	Bus Tie Breaker Fault	Low	0.86	0.85	0.76	0.93	0.92	0.83	0.96	0.98	0.72	0.85	0.90	0.96	Switch in the Fulton SVD (230 kV)
MONROE2 115 kV	P2-4:A2:7:_FULTON 115KV - SECTION 2D & 1D	P2-4	Bus Tie Breaker Fault	Low	0.86	0.85	0.76	0.93	0.92	0.83	0.96	0.98	0.72	0.85	0.90	0.96	Operating solution
SNTA RSA 115 kV	P2-4:A2:7:_FULTON 115KV - SECTION 2D & 1D	P2-4	Bus Tie Breaker Fault	Low	0.86	0.85	0.77	0.93	0.92	0.83	0.96	0.98	0.72	0.85	0.90	0.96	Operating solution
STNY PTP 115 kV	P2-4:A2:7:_FULTON 115KV - SECTION 2D & 1D	P2-4	Bus Tie Breaker Fault	Low	0.87	0.87	0.79	0.94	0.93	0.85	0.96	0.98	0.75	0.87	0.91	0.96	Operating solution
STONY PT 115 kV	P2-4:A2:7:_FULTON 115KV - SECTION 2D & 1D	P2-4	Bus Tie Breaker Fault	Low	0.87	0.87	0.79	0.94	0.93	0.85	0.96	0.98	0.75	0.86	0.91	0.96	Operating solution
BELLVUE 115 kV	P2-4:A2:7:_FULTON 115KV - SECTION 2D & 1D	P2-4	Bus Tie Breaker Fault	Low	0.88	0.88	0.80	0.94	0.93	0.86	0.96	0.98	0.77	0.87	0.92	0.96	Operating solution
PENNGRVE 115 kV	P2-4:A2:11:_LAKEVILLE 115KV - SECTION 1D & 2D	P2-4	Bus Tie Breaker Fault	Low	0.97	0.97	0.89	0.99	0.98	0.93	1.05	1.05	0.85	0.97	1.00	1.04	Continue to monitor
PENNGRVE 115 kV	P2-4:A2:7:_FULTON 115KV - SECTION 2D & 1D	P2-4	Bus Tie Breaker Fault	Low	0.91	0.91	0.85	0.95	0.94	0.89	0.97	0.98	0.83	0.90	0.94	0.97	Continue to monitor
CORONA 115 kV	P2-2:A2:36:_LAKEVILLE 115KV SECTION 1D	P2-2	Bus	Low	0.97	0.96	0.89	0.99	0.98	0.93	1.05	1.04	0.85	0.96	0.99	1.04	Continue to monitor



Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
					2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2035 ATE	2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	
SONOMA 115 kV	P2-4:A2:11:_LAKEVILLE 115KV - SECTION 1D & 2D	P2-4	Bus Tie Breaker Fault	Low	0.92	0.92	0.84	0.96	0.94	0.91	1.03	1.05	0.78	0.92	0.96	1.02	Continue to monitor
WILLITS 60 kV	P2-4:A2:5:_MENDOCNO 115KV - SECTION 1D & 2D	P2-4	Bus Tie Breaker Fault	Low	0.98	0.93	0.88	0.99	0.98	0.90	1.02	1.03	0.57	0.93	1.00	0.99	Continue to monitor
LYTNVILLE 60 kV	P2-2:A2:16:_MENDOCNO 115KV SECTION 2D	P2-2	Bus	Low	0.99	0.98	0.89	0.97	0.96	0.93	1.02	1.02	0.75	0.98	1.01	1.01	Continue to monitor
COVELO6 60 kV	P2-2:A2:16:_MENDOCNO 115KV SECTION 2D	P2-2	Bus	Low	0.99	0.97	0.88	0.96	0.95	0.92	1.01	1.02	0.73	0.97	1.01	1.00	Continue to monitor
HARTLEY 60 kV	P2-2:A2:21:_EGLE RCK 115KV SECTION MA	P2-2	Bus	Low	0.98	0.97	0.90	0.98	0.96	0.93	0.98	1.02	NConv	0.97	0.98	0.99	Continue to monitor
CLER LKE 60 kV	P2-2:A2:21:_EGLE RCK 115KV SECTION MA	P2-2	Bus	Low	0.98	0.97	0.89	0.97	0.96	0.92	0.98	1.02	NConv	0.97	0.97	0.99	Continue to monitor
KONOCIT6 60 kV	P2-2:A2:21:_EGLE RCK 115KV SECTION MA	P2-2	Bus	Low	0.96	0.97	0.88	0.95	0.94	0.91	0.95	1.02	NConv	0.97	0.95	0.96	Continue to monitor
LOWR LKE 60 kV	P2-2:A2:21:_EGLE RCK 115KV SECTION MA	P2-2	Bus	Low	0.96	0.99	0.89	0.94	0.94	0.91	0.95	1.03	NConv	0.99	0.93	0.96	Continue to monitor
EGLE RCK 60 kV	P2-2:A2:21:_EGLE RCK 115KV SECTION MA	P2-2	Bus	Low	0.96	0.97	0.88	0.95	0.94	0.91	0.95	1.02	NConv	0.97	0.95	0.96	Continue to monitor
GUALALA 60 kV	P2-2:A2:36:_LAKEVILLE 115KV SECTION 1D	P2-2	Bus	Low	1.00	0.99	0.90	1.00	1.00	0.94	1.02	1.05	N/A	0.99	1.04	1.01	Continue to monitor
WILLITSJ 60 kV	P2-4:A2:5:_MENDOCNO 115KV - SECTION 1D & 2D	P2-4	Bus Tie Breaker Fault	Low	0.98	0.93	0.88	1.00	0.98	0.91	1.02	1.03	0.57	0.93	1.00	0.99	Continue to monitor
PUEBLO 115 kV	P2-4:A2:11:_LAKEVILLE 115KV - SECTION 1D & 2D	P2-4	Bus Tie Breaker Fault	Low	0.95	0.94	0.87	0.97	0.95	0.93	1.03	1.05	0.82	0.94	0.98	1.02	Continue to monitor
HGHWY J2 115 kV	P2-3:A2:7:_GEYSR20 - 1D 230KV & GEYSR18-LAKEVILLE-GEYSR20-GEYSR13 LINE	P2-3	Non-Bus Tie Breaker Fault	Low	0.95	0.94	0.89	1.01	1.00	0.95	1.02	1.04	N/A	0.94	0.96	1.00	Continue to monitor
HIGHWAY 115 kV	P2-2:A2:5:_NCPA2 230KV SECTION 1D	P2-2	Bus	Low	0.95	0.94	0.88	1.01	1.00	0.95	1.02	1.04	0.81	0.94	0.96	1.00	Continue to monitor
NTWR ALT 115 kV	P2-2:A2:10:_GEYSR17 230KV SECTION 1D	P2-2	Bus	Low	0.96	0.95	0.90	1.01	1.01	0.96	1.02	1.04	N/A	0.95	0.97	1.00	Continue to monitor
MEYERTP2 115 kV	P2-2:A2:5:_NCPA2 230KV SECTION 1D	P2-2	Bus	Low	0.94	0.94	0.88	1.00	1.00	0.95	1.01	1.04	0.81	0.94	0.96	1.00	Continue to monitor
CALISTGA 60 kV	P2-2:A2:26:_FULTON 115KV SECTION 1D	P2-2	Bus	Low	0.82	0.79	0.86	0.89	0.89	0.93	0.94	1.02	N/A	0.79	0.83	0.95	Voltage support
ANNAPOLS 60kV	P1-1:A2:12:_GEYSER17 13.80KV GEN UNIT 1 & P1-2:A2:2:_FULTON-GEYSR16-GEYSR12-GEYSR14 230KV [0]	P3	G-1/N-1	Low	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Continue to monitor
CALISTGA 60kV	P1-1:A2:12:_GEYSER17 13.80KV GEN UNIT 1 & P1-3:A2:2:_FULTON 230/115KV TB 9	P3	G-1/N-1	Low	0.80	0.77	0.85	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.77	>0.9	>0.9	Voltage support
CLER LKE 60kV	P1-1:A2:17:_POTTRVLY 2.40KV GEN UNIT 3 & P1-3:A2:25:_EGLE RCK 115/60KV TB 1	P3	G-1/N-1	Low	>0.9	>0.9	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Continue to monitor
CORONA 115kV	P1-1:A2:12:_GEYSER17 13.80KV GEN UNIT 1 & P1-2:A2:32:_CORONA-LAKEVILLE 115KV [4311]	P3	G-1/N-1	Low	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Continue to monitor
COVELO6 60kV	P1-1:A2:12:_GEYSER17 13.80KV GEN UNIT 1 & P1-2:A2:43:_LAYTONVILLE-WILLITS 60KV [8360]	P3	G-1/N-1	Low	>0.9	>0.9	0.72	>0.9	0.54	0.48	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Continue to monitor
DUNBAR 60kV	P1-1:A2:8:_GEYSER12 13.80KV GEN UNIT 1 & P1-2:A2:65:_LAKEVILLE #1 60KV [7360]	P3	G-1/N-1	Low	0.84	0.82	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.82	>0.9	>0.9	Switch in the Fulton SVD (230 kV)
EGLE RCK 60kV	P1-1:A2:17:_POTTRVLY 2.40KV GEN UNIT 3 & P1-3:A2:25:_EGLE RCK 115/60KV TB 1	P3	G-1/N-1	Low	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Continue to monitor
GUALALA 60kV	P1-1:A2:12:_GEYSER17 13.80KV GEN UNIT 1 & P1-2:A2:2:_FULTON-GEYSR16-GEYSR12-GEYSR14 230KV [0]	P3	G-1/N-1	Low	>0.9	>0.9	0.85	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Continue to monitor
HARTLEY 60kV	P1-1:A2:17:_POTTRVLY 2.40KV GEN UNIT 3 & P1-3:A2:25:_EGLE RCK 115/60KV TB 1	P3	G-1/N-1	Low	>0.9	>0.9	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Continue to monitor
HIGHWAY 115kV	P1-1:A2:12:_GEYSER17 13.80KV GEN UNIT 1 & P1-3:A6:5:_IGNACIO 230/115KV TB 6	P3	G-1/N-1	Low	>0.9	>0.9	0.86	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Continue to monitor

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
					2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2035 ATE	2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	
KONOCIT6 60kV	P1-1:A2:17:_POTTRVLY 2.40KV GEN UNIT 3 & P1-3:A2:25:_EGLE RCK 115/60KV TB 1	P3	G-1/N-1	Low	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Continue to monitor
LOWR LKE 60kV	P1-1:A2:17:_POTTRVLY 2.40KV GEN UNIT 3 & P1-3:A2:25:_EGLE RCK 115/60KV TB 1	P3	G-1/N-1	Low	>0.9	>0.9	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Continue to monitor
LYTNVLE 60kV	P1-1:A2:12:_GEYSER17 13.80KV GEN UNIT 1 & P1-2:A2:43:_LAYTONVILLE-WILLITS 60KV [8360]	P3	G-1/N-1	Low	>0.9	>0.9	0.73	>0.9	0.55	0.49	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Continue to monitor
MEYERTP2 115kV	P1-1:A2:12:_GEYSER17 13.80KV GEN UNIT 1 & P1-3:A6:5:_IGNACIO 230/115KV TB 6	P3	G-1/N-1	Low	>0.9	>0.9	0.85	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Continue to monitor
NTWR ALT 115kV	P1-1:A2:12:_GEYSER17 13.80KV GEN UNIT 1 & P1-3:A6:5:_IGNACIO 230/115KV TB 6	P3	G-1/N-1	Low	>0.9	>0.9	0.85	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Continue to monitor
PENNGRVE 115kV	P1-1:A2:12:_GEYSER17 13.80KV GEN UNIT 1 & P1-2:A2:32:_CORONA-LAKEVILLE 115KV [4311]	P3	G-1/N-1	Low	>0.9	>0.9	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Continue to monitor
PUEBLO 115kV	P1-1:A2:10:_GEYSER14 13.80KV GEN UNIT 1 & P1-2:A2:35:_SONOMA-PUEBLO 115KV [3810]	P3	G-1/N-1	Low	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Operating solution
ST.HELNA 60kV	P1-1:A2:12:_GEYSER17 13.80KV GEN UNIT 1 & P1-2:A2:2:_FULTON-GEYSR16-GEYSR12-GEYSR14 230KV [0]	P3	G-1/N-1	Low	>0.9	0.89	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.89	>0.9	>0.9	Fulton-Calistoga Maintenance project
DUNBAR 60 kV	P5-5c(DC):A2:2:_Station	P5	Non-Redundant Battery Supply	Low	0.83	0.79	NConv	0.93	0.95	0.81	0.99	1.05	NConv	0.79	0.92	0.98	Install redundant battery supply
FULTON 115 kV	P5-5a:A2:1:_FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	Low	0.88	0.87	0.80	>0.9	>0.9	0.85	>0.9	>0.9	0.54	0.87	>0.9	>0.9	Install Redundant Relay
SNTA RSA 115 kV	P5-5a:A2:10:_FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.78	>0.9	NConv	0.83	>0.9	>0.9	NConv	NConv	>0.9	>0.9	Install Redundant Relay
STONY PT 115 kV	P5-5a:A2:10:_FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.81	>0.9	NConv	0.85	>0.9	>0.9	NConv	NConv	>0.9	>0.9	Install Redundant Relay
PENNGRVE 115 kV	P5-5a:A2:10:_FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.87	>0.9	NConv	0.89	>0.9	>0.9	NConv	NConv	>0.9	>0.9	Install Redundant Relay
PTTR VLY 60 kV	P5-5c(DC):A2:3:_Station	P5	Non-Redundant Battery Supply	Low	0.86	0.36	0.54	NConv	NConv	NConv	NConv	>0.9	NConv	0.36	0.49	0.42	Install redundant battery supply
WILLITS 60 kV	P5-5c(DC):A2:3:_Station	P5	Non-Redundant Battery Supply	Low	0.82	0.39	0.49	NConv	NConv	NConv	NConv	>0.9	NConv	0.39	0.53	0.44	Install redundant battery supply
LYTNVLE 60 kV	P5-5c(DC):A2:3:_Station	P5	Non-Redundant Battery Supply	Low	0.83	0.46	0.52	NConv	NConv	NConv	NConv	>0.9	NConv	0.46	0.59	0.48	Install redundant battery supply
COVELO 60 kV	P5-5a:A2:10:_FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.90	>0.9	NConv	>0.9	>0.9	>0.9	NConv	NConv	>0.9	>0.9	Install Redundant Relay
GUALALA 60 kV	P5-5a:A2:10:_FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.30	0.29	NConv	0.35	0.28	0.50	NConv	NConv	0.36	0.28	Install Redundant Relay
FORT RSS 60 kV	P5-5a:A2:10:_FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.33	0.30	NConv	0.38	0.29	0.50	NConv	NConv	0.36	0.29	Install Redundant Relay
SLMN CRK 60 kV	P5-5a:A2:10:_FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.33	0.30	NConv	0.38	0.29	0.50	NConv	NConv	0.36	0.29	Install Redundant Relay
MONTE RO 60 kV	P5-5a:A2:10:_FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.35	0.31	NConv	0.40	0.29	0.50	NConv	NConv	0.37	0.30	Install Redundant Relay
WOHLER 60 kV	P5-5a:A2:10:_FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.38	0.32	NConv	0.43	0.31	0.50	NConv	NConv	0.37	0.31	Install Redundant Relay

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)								2035 ATE	Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak		2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	
WHLR TAP 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.38	0.32	NConv	0.43	0.31	0.50	NConv	NConv	0.37	0.31	Install Redundant Relay
MIRABEL 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.38	0.32	NConv	0.43	0.31	0.50	NConv	NConv	0.37	0.31	Install Redundant Relay
MOLINO 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.42	0.32	NConv	0.46	0.31	0.51	NConv	NConv	0.38	0.32	Install Redundant Relay
GYSRVLE 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.41	0.36	NConv	0.46	0.33	0.50	NConv	NConv	0.40	0.33	Install Redundant Relay
GYSR 1-2 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.41	0.36	NConv	0.46	0.33	0.50	NConv	NConv	0.40	0.33	Install Redundant Relay
WINDSOR 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.41	0.35	NConv	0.46	0.32	0.50	NConv	NConv	0.39	0.32	Install Redundant Relay
FCHMNTP2 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.41	0.36	NConv	0.47	0.33	0.50	NConv	NConv	0.40	0.33	Install Redundant Relay
FULTON 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.40	0.33	NConv	0.45	0.31	0.50	NConv	NConv	0.38	0.31	Install Redundant Relay
FTCH MTN 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.42	0.36	NConv	0.47	0.33	0.50	NConv	NConv	0.40	0.33	Install Redundant Relay
HDSBGTP1 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.42	0.36	NConv	0.47	0.33	0.51	NConv	NConv	0.40	0.33	Install Redundant Relay
FTCHMTNP 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.43	0.37	NConv	0.48	0.34	0.51	NConv	NConv	0.41	0.34	Install Redundant Relay
LAGUNA 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.49	0.31	NConv	0.53	0.31	0.50	NConv	NConv	0.38	0.31	Install Redundant Relay
COTATI 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.57	0.31	NConv	0.60	0.31	0.50	NConv	NConv	0.38	0.32	Install Redundant Relay
LAGUNATP 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.49	0.31	NConv	0.53	0.31	0.50	NConv	NConv	0.38	0.31	Install Redundant Relay
PETC_JCT 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.72	>0.9	NConv	0.74	>0.9	>0.9	NConv	NConv	>0.9	>0.9	Install Redundant Relay
PETLMA A 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.73	>0.9	NConv	0.75	>0.9	>0.9	NConv	NConv	>0.9	>0.9	Install Redundant Relay
SNMA TAP 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.56	0.31	NConv	0.59	0.31	0.50	NConv	NConv	0.38	0.32	Install Redundant Relay
SNMALDFL 60 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.56	0.31	NConv	0.59	0.31	0.50	NConv	NConv	0.38	0.32	Install Redundant Relay
DUNBAR 60 kV	P5-5c(DC):A2:2:_ Station	P5	Non-Redundant Battery Supply	Low	0.83	0.79	NConv	>0.9	>0.9	0.81	>0.9	>0.9	NConv	0.79	>0.9	>0.9	Install redundant battery supply
HIGHWAY 115 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.88	>0.9	NConv	>0.9	>0.9	>0.9	NConv	NConv	>0.9	>0.9	Install Redundant Relay
NTWR ALT 115 kV	P5-5a:A2:10:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.88	>0.9	NConv	>0.9	>0.9	>0.9	NConv	NConv	>0.9	>0.9	Install Redundant Relay

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)								2035 ATE	Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak		2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	
MEYERTP2 115 kV	P5-5a:A2:10: FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.88	>0.9	NConv	>0.9	>0.9	>0.9	NConv	NConv	>0.9	>0.9	Install Redundant Relay
ST.HELNA 60 kV	P5-5a:A2:10: FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.35	0.28	NConv	0.41	0.28	0.49	NConv	NConv	0.31	0.28	Install Redundant Relay
CALISTGA 60 kV	P5-5a:A2:10: FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	Low	NConv	NConv	0.30	0.24	NConv	0.36	0.25	0.48	NConv	NConv	0.26	0.25	Install Redundant Relay
ANNAPOLS 60kV	P1-3:A2:2: FULTON 230/115KV TB 9 & P1-3:A2:1: FULTON 230/115KV TB 4	P6	N-1-1	Low	0.89	0.87	0.75	>0.9	>0.9	0.81	>0.9	>0.9	N/A	0.87	>0.9	>0.9	Operating solution
BELLVUE 115kV	P1-2:A2:25: FULTON-SANTA ROSA #1 115KV [1620] & P1-2:A2:26: FULTON-SANTA ROSA #2 115KV [1630]	P6	N-1-1	Low	0.88	0.88	0.80	>0.9	>0.9	0.86	>0.9	>0.9	N/A	0.87	>0.9	>0.9	Operating solution
CALISTGA 60kV	P1-3:A2:2: FULTON 230/115KV TB 9 & P1-3:A2:1: FULTON 230/115KV TB 4	P6	N-1-1	Low	0.63	0.59	0.68	0.82	0.80	0.80	>0.9	>0.9	N/A	0.59	0.75	>0.9	Voltage support
CALPELLA 115kV	P1-2:A2:15: GEYSERS #3-CLOVERDALE 115KV [1650] MOAS OPENED ON AIDLINJCT_AIDLINGYSR & P1-2:A2:11: MENDOCINO-UKIAH 115KV [2420] MOAS OPENED ON MENDOCNO_CALPELLA	P6	N-1-1	Low	0.72	0.68	0.59	0.84	0.82	0.76	0.78	0.86	N/A	0.67	0.79	0.78	Operating solution
CLOVRDLE 115kV	P1-2:A2:11: MENDOCINO-UKIAH 115KV [2420] MOAS OPENED ON MENDOCNO_CALPELLA & P1-2:A2:15: GEYSERS #3-CLOVERDALE 115KV [1650] MOAS OPENED ON AIDLINJCT_AIDLINGYSR	P6	N-1-1	Low	0.74	0.70	0.61	0.84	0.83	0.77	0.80	0.87	N/A	0.70	0.80	0.80	Operating solution
COTATI 60kV	P1-3:A2:2: FULTON 230/115KV TB 9 & P1-3:A2:1: FULTON 230/115KV TB 4	P6	N-1-1	Low	>0.9	0.89	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.89	>0.9	>0.9	Operating solution
FORT RSS 60kV	P1-3:A2:2: FULTON 230/115KV TB 9 & P1-3:A2:1: FULTON 230/115KV TB 4	P6	N-1-1	Low	0.90	0.88	0.76	>0.9	>0.9	0.83	>0.9	>0.9	N/A	0.88	>0.9	>0.9	Operating solution
FULTON 115kV	P1-3:A2:2: FULTON 230/115KV TB 9 & P1-3:A2:1: FULTON 230/115KV TB 4	P6	N-1-1	Low	0.88	0.87	0.81	>0.9	>0.9	0.85	>0.9	>0.9	N/A	0.87	>0.9	>0.9	Operating solution
GUALALA 60kV	P1-3:A2:2: FULTON 230/115KV TB 9 & P1-3:A2:1: FULTON 230/115KV TB 4	P6	N-1-1	Low	0.88	0.86	0.71	>0.9	>0.9	0.79	>0.9	>0.9	N/A	0.86	>0.9	>0.9	Operating solution
GYSRVLE 60kV	P1-3:A2:2: FULTON 230/115KV TB 9 & P1-3:A2:1: FULTON 230/115KV TB 4	P6	N-1-1	Low	>0.9	0.90	0.83	>0.9	>0.9	0.88	>0.9	>0.9	N/A	0.90	>0.9	>0.9	Operating solution
HPLND JT 115kV	P1-2:A2:11: MENDOCINO-UKIAH 115KV [2420] MOAS OPENED ON MENDOCNO_CALPELLA & P1-2:A2:15: GEYSERS #3-CLOVERDALE 115KV [1650] MOAS OPENED ON AIDLINJCT_AIDLINGYSR	P6	N-1-1	Low	0.75	0.70	0.62	0.84	0.83	0.77	0.80	0.87	N/A	0.70	0.81	0.80	Operating solution
PUEBLO 115kV	P1-2:A2:35: SONOMA-PUEBLO 115KV [3810] & P1-2:A6:5: IGNACIO-SOBRANTE 230KV [4920]	P6	N-1-1	Low	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	>0.9	>0.9	Operating solution
RINCON 115kV	P1-3:A2:2: FULTON 230/115KV TB 9 & P1-3:A2:1: FULTON 230/115KV TB 4	P6	N-1-1	Low	0.90	0.89	0.83	>0.9	>0.9	0.87	>0.9	>0.9	N/A	0.89	>0.9	>0.9	SPS, battery storage or line capacity increase
SILVERDO 115kV	P1-3:A2:1: FULTON 230/115KV TB 4 & P1-3:A2:2: FULTON 230/115KV TB 9	P6	N-1-1	Low	0.90	0.89	0.83	>0.9	>0.9	0.87	>0.9	>0.9	N/A	0.89	>0.9	>0.9	SPS, battery storage or line capacity increase
SLMN CRK 60kV	P1-3:A2:2: FULTON 230/115KV TB 9 & P1-3:A2:1: FULTON 230/115KV TB 4	P6	N-1-1	Low	0.90	0.88	0.77	>0.9	>0.9	0.83	>0.9	>0.9	N/A	0.88	>0.9	>0.9	SPS, battery storage or line capacity increase
SNMALDFL 60kV	P1-3:A2:2: FULTON 230/115KV TB 9 & P1-3:A2:1: FULTON 230/115KV TB 4	P6	N-1-1	Low	>0.9	0.89	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.89	>0.9	>0.9	SPS, battery storage or line capacity increase
SNTA RSA 115kV	P1-2:A2:25: FULTON-SANTA ROSA #1 115KV [1620] & P1-2:A2:26: FULTON-SANTA ROSA #2 115KV [1630]	P6	N-1-1	Low	0.86	0.85	0.76	>0.9	>0.9	0.83	>0.9	>0.9	N/A	0.85	>0.9	>0.9	Operating solution
ST.HELNA 60kV	P1-3:A2:2: FULTON 230/115KV TB 9 & P1-3:A2:1: FULTON 230/115KV TB 4	P6	N-1-1	Low	0.77	0.74	0.77	0.90	0.88	0.85	>0.9	>0.9	N/A	0.74	0.85	>0.9	Fulton-Calistoga Maintenance project
STONY PT 115kV	P1-2:A2:26: FULTON-SANTA ROSA #2 115KV [1630] & P1-2:A2:25: FULTON-SANTA ROSA #1 115KV [1620]	P6	N-1-1	Low	0.87	0.87	0.79	>0.9	>0.9	0.85	>0.9	>0.9	N/A	0.86	>0.9	>0.9	Operating solution

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)								2035 ATE	Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak		2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	
UKIAH 115kV	P1-2:A2:11: MENDOCINO-UKIAH 115KV [2420] MOAS OPENED ON MENDOCINO_CALPELLA & P1-2:A2:15: GEYSERS #3-CLOVERDALE 115KV [1650] MOAS OPENED ON AIDLINJCT_AIDLINGYSR	P6	N-1-1	Low	0.73	0.68	0.59	0.83	0.82	0.76	0.78	0.86	N/A	0.68	0.79	0.78	Operating solution
FULTON 230 kV	P7-1:A2:11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7	DCTL	Low	0.96	0.96	0.90	0.99	0.99	0.94	1.01	1.01	0.84	0.96	0.97	1.00	Continue to monitor
MONROE1 115 kV	P7-1:A2:15: FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINES	P7	DCTL	Low	0.86	0.85	0.76	0.93	0.92	0.83	0.95	0.98	0.73	0.85	0.90	0.95	Operating solution
MONROE2 115 kV	P7-1:A2:15: FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINES	P7	DCTL	Low	0.86	0.85	0.76	0.92	0.92	0.83	0.95	0.98	0.72	0.85	0.90	0.95	Operating solution
SNTA RSA 115 kV	P7-1:A2:15: FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINES	P7	DCTL	Low	0.86	0.85	0.76	0.93	0.92	0.83	0.95	0.98	0.73	0.85	0.90	0.95	Operating solution
STONY PT 115 kV	P7-1:A2:15: FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINES	P7	DCTL	Low	0.87	0.87	0.79	0.93	0.93	0.85	0.95	0.98	0.76	0.86	0.91	0.95	Operating solution
PENNGRVE 115 kV	P7-1:A2:15: FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINES	P7	DCTL	Low	0.91	0.90	0.85	0.95	0.94	0.89	0.97	0.98	0.83	0.90	0.94	0.97	Continue to monitor
SONOMA 115 kV	P7-1:A2:16: LAKEVILLE-SONOMA #1 & LAKEVILLE-SONOMA #2 LINES	P7	DCTL	Low	0.92	0.92	0.86	0.95	0.94	0.92	1.02	1.04	0.82	0.92	0.96	1.02	Continue to monitor
STHELJ2 115 kV	P7-1:A2:21: FULTON - HOPLAND 60 KV & GEYSER 12 - FULTON & GEYSER 17 - FULTON 230 KV LINES	P7	DCTL	Low	0.98	0.97	0.90	1.01	1.00	0.94	1.03	1.04	0.86	0.97	0.99	1.02	Continue to monitor
LYTNVLE 60 kV	P7-1:A2:23: EAGLE ROCK -REDBUD & CORTINA-MENDOCINO #1 LINES	P7	DCTL	Low	0.98	1.00	0.88	0.96	0.96	0.92	1.02	1.02	0.52	0.98	1.01	1.00	Continue to monitor
COVELO6 60 kV	P7-1:A2:23: EAGLE ROCK -REDBUD & CORTINA-MENDOCINO #1 LINES	P7	DCTL	Low	0.98	0.99	0.87	0.96	0.95	0.91	1.01	1.02	0.50	0.97	1.01	1.00	Continue to monitor
GUALALA 60 kV	P7-1:A2:11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7	DCTL	Low	0.99	0.98	0.84	1.00	1.00	0.91	1.01	1.04	0.72	0.98	1.03	1.01	Continue to monitor
ANNAPOLS 60 kV	P7-1:A2:11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7	DCTL	Low	1.00	0.99	0.86	1.01	1.01	0.93	1.02	1.04	0.75	0.99	1.04	1.01	Continue to monitor
FORT RSS 60 kV	P7-1:A2:11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7	DCTL	Low	1.01	1.00	0.88	1.02	1.02	0.94	1.02	1.04	0.78	0.99	1.04	1.02	Continue to monitor
SLMN JCT 60 kV	P7-1:A2:11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7	DCTL	Low	1.01	1.00	0.89	1.02	1.02	0.95	1.02	1.04	0.79	1.00	1.04	1.02	Continue to monitor
SLMN CRK 60 kV	P7-1:A2:21: FULTON - HOPLAND 60 KV & GEYSER 12 - FULTON & GEYSER 17 - FULTON 230 KV LINES	P7	DCTL	Low	1.00	1.00	0.87	1.02	1.02	0.94	1.02	1.04	0.79	0.99	1.03	1.02	Continue to monitor
MONTE RO 60 kV	P7-1:A2:21: FULTON - HOPLAND 60 KV & GEYSER 12 - FULTON & GEYSER 17 - FULTON 230 KV LINES	P7	DCTL	Low	1.01	1.01	0.89	1.02	1.03	0.95	1.02	1.04	0.82	1.00	1.03	1.02	Continue to monitor
GYSRVLE 60 kV	P7-1:A2:21: FULTON - HOPLAND 60 KV & GEYSER 12 - FULTON & GEYSER 17 - FULTON 230 KV LINES	P7	DCTL	Low	0.99	0.98	0.86	1.03	1.02	0.94	1.03	1.03	0.80	0.98	1.01	1.03	Continue to monitor
GYSR 1-2 60 kV	P7-1:A2:21: FULTON - HOPLAND 60 KV & GEYSER 12 - FULTON & GEYSER 17 - FULTON 230 KV LINES	P7	DCTL	Low	0.99	0.99	0.87	1.03	1.02	0.94	1.03	1.03	0.81	0.98	1.01	1.03	Continue to monitor
WINDSOR 60 kV	P7-1:A2:21: FULTON - HOPLAND 60 KV & GEYSER 12 - FULTON & GEYSER 17 - FULTON 230 KV LINES	P7	DCTL	Low	1.00	0.99	0.89	1.03	1.02	0.96	1.03	1.03	0.84	0.99	1.02	1.03	Continue to monitor
HDSBGP2 60 kV	P7-1:A2:21: FULTON - HOPLAND 60 KV & GEYSER 12 - FULTON & GEYSER 17 - FULTON 230 KV LINES	P7	DCTL	Low	0.99	0.99	0.87	1.03	1.02	0.94	1.03	1.03	0.81	0.99	1.01	1.03	Continue to monitor
FTCH MTN 60 kV	P7-1:A2:21: FULTON - HOPLAND 60 KV & GEYSER 12 - FULTON & GEYSER 17 - FULTON 230 KV LINES	P7	DCTL	Low	0.99	0.99	0.87	1.03	1.02	0.94	1.03	1.03	0.81	0.99	1.01	1.03	Continue to monitor
HDSBGP1 60 kV	P7-1:A2:21: FULTON - HOPLAND 60 KV & GEYSER 12 - FULTON & GEYSER 17 - FULTON 230 KV LINES	P7	DCTL	Low	0.99	0.99	0.87	1.03	1.02	0.94	1.03	1.03	0.81	0.99	1.01	1.03	Continue to monitor
SILVRD12 115 kV	P7-1:A2:21: FULTON - HOPLAND 60 KV & GEYSER 12 - FULTON & GEYSER 17 - FULTON 230 KV LINES	P7	DCTL	Low	0.98	0.97	0.90	1.01	1.00	0.95	1.03	1.04	0.86	0.97	0.99	1.02	Continue to monitor

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)								2035 ATE	Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak		2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	
SILVERDO 115 kV	P7-1:A2:21: FULTON - HOPLAND 60 kV & GEYSER 12 - FULTON & GEYSER 17 - FULTON 230 kV LINES	P7	DCTL	Low	0.98	0.97	0.90	1.01	1.00	0.94	1.03	1.04	0.86	0.97	0.99	1.02	Continue to monitor
MONTCLLO 115 kV	P7-1:A2:21: FULTON - HOPLAND 60 kV & GEYSER 12 - FULTON & GEYSER 17 - FULTON 230 kV LINES	P7	DCTL	Low	0.98	0.97	0.90	1.01	1.00	0.94	1.03	1.04	0.86	0.97	0.99	1.02	Continue to monitor
MNTCLOPH 115 kV	P7-1:A2:11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7	DCTL	Low	0.98	0.97	0.90	1.01	1.00	0.94	1.03	1.04	0.85	0.97	0.99	1.02	Continue to monitor
PUEBLO 115 kV	P7-1:A2:16: LAKEVILLE-SONOMA #1 & LAKEVILLE-SONOMA #2 LINES	P7	DCTL	Low	0.95	0.94	0.89	0.97	0.95	0.94	1.02	1.04	0.85	0.94	0.98	1.01	Continue to monitor
LS GLLNS 115 kV	P7-1:A2:11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7	DCTL	Low	0.98	0.97	0.90	1.01	1.01	0.95	1.03	1.04	0.83	0.97	0.99	1.01	Continue to monitor
SAN RAFL 115 kV	P7-1:A2:11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7	DCTL	Low	0.98	0.97	0.89	1.01	1.01	0.95	1.03	1.04	0.83	0.97	0.99	1.01	Continue to monitor
HIGHWAY 115 kV	P7-1:A2:11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7	DCTL	Low	0.93	0.92	0.84	1.00	0.99	0.93	1.01	1.04	0.75	0.92	0.95	0.99	Continue to monitor
NTWR ALT 115 kV	P7-1:A2:11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7	DCTL	Low	0.93	0.92	0.84	1.00	0.99	0.92	1.01	1.04	0.75	0.92	0.95	0.99	Continue to monitor
CARQUINZ 115 kV	P7-1:A2:11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7	DCTL	Low	0.98	0.97	0.88	1.02	1.01	0.95	1.02	1.04	0.81	0.97	0.99	1.01	Continue to monitor
ST.HELNA 60 kV	P7-1:A2:11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7	DCTL	Low	0.91	0.89	0.88	0.96	0.97	0.96	0.99	1.03	0.79	0.89	0.93	0.99	Fulton-Calistoga Maintenance project
CALISTGA 60 kV	P7-1:A2:10: FULTON-IGNACIO #1 & FULTON-LAKEVILLE LINES	P7	DCTL	Low	0.82	0.78	0.90	0.89	0.89	0.95	0.96	1.03	0.84	0.80	0.85	0.95	Voltage support



2022-2023 ISO Reliability Assessment - Study Results

Study Area: **PG&E North Coast & North Bay**

Voltage Deviation



Substation	Contingency (All and Worst P6)	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)								2035 ATE	Post Cont. Voltage Deviation % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak		2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	
CALISTGA 60 kV	P1-2:A2:65:_LAKEVILLE #1 60KV [7360]	P1	N-1	<8	<8	10	<8	<8	<8	<8	<8	20	9	<8	<8	Voltage support
CORONA 115 kV	P1-2:A2:32:_CORONA-LAKEVILLE 115KV [4311]	P1	N-1	<8	<8	9	<8	<8	<8	<8	<8	12	<8	<8	<8	Continue to monitor
COVELO6 60 kV	P1-2:A2:43:_LAYTONVILLE-WILLITS 60KV [8360]	P1	N-1	<8	<8	13	27	36	44	<8	<8	33	<8	<8	<8	Continue to monitor
DUNBAR 60 kV	P1-2:A2:65:_LAKEVILLE #1 60KV [7360]	P1	N-1	14	16	14	<8	<8	<8	<8	<8	23	18	<8	<8	Switch in the Fulton SVD (230 kV)
KONOCI6 60 kV	P1-2:A2:54:_KONOCI-EAGLE ROCK 60KV [6861]	P1	N-1	<8	<8	11	<8	<8	<8	<8	<8	13	<8	<8	<8	Continue to monitor
LYTNVLE 60 kV	P1-2:A2:43:_LAYTONVILLE-WILLITS 60KV [8360]	P1	N-1	<8	<8	13	27	35	44	<8	<8	32	<8	<8	<8	Continue to monitor

Study Area: PG&E North Coast & North Bay

Transient Stability



Contingency	Category	Category Description	Transient Stability Performance						Potential Mitigation Solutions
			Baseline Scenarios				Sensitivity Scenarios		
			2024 Spring Off-Peak	2027 Summer Peak	2032 Summer Peak	2032 Spring Off-Peak	2027 SP High CEC Forecast	2024 OP Sensitivity	
In accordance with TPL-001-4- Requirement R2.6, this area relies on the past studies from the 2019-20 Transmission Planning Process for transient stability studies:									
<a href="http://www.caiso.com/Documents/AppendixC-BoardApprovedt2019-2020TransmissionPlan.pdf">http://www.caiso.com/Documents/AppendixC-BoardApprovedt2019-2020TransmissionPlan.pdf</a>									

Study Area: PG&E North Coast & North Bay



Single Contingency Load Drop

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)													Potential Mitigation Solutions
			2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2032 Spring Off-Peak	2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	2032 SP with Additional Transportation Electrification	

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

Study Area: PG&E North Coast & North Bay



Single Source Substation with more than 100 MW Load

Substation	Load Served (MW)													Potential Mitigation Solutions
	2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2032 Spring Off-Peak	2027 SP High CEC Forecast	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	2032 SP with Additional Transportation Electrification	

No single source substation with more than 100 MW