

Study Area: Kern

Thermal Overloads

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
Arco-Midway 230kV line	P5-5C(DC):A15:1:_MIDWAY 500KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-redundant relay	Diverge	Diverge	Diverge	Diverge	Diverge	Diverge	Diverge	Diverge	Diverge	Install Redundant Battery Supply
Kern Oil-7th Standard 115kV line	P1-2:A15:41:_7TH STANDARD-KERN 115KV [1981]	P1	Line w/o Fault	120	132	80	5	58	51	60	58	161	Project: NE Kern 115kV Area Reinforcement
Kern Oil-Kern PP 115kV line	P1-2:A15:49:_KERN-MAGUNDEN-WITCO 115KV [1970]P1-2:A15:41:_7TH STANDARD-KERN 115KV [1981]	P6	N-1-1	129	Diverge	Diverge	<100	<100	<100	<100	<100	<100	Under review
Kern Oil-Magunden 15kV line	P7-1:A15:7:_Kern PP-Westpark No. 1 & 2 115 kV Lines	P7	DCTL	86	78	108	<100	25	<100	16	<100	81	Operating Solution
Kern PP bus section breaker	P2-4:A15:7:_KERN PWR 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	103	<100	<100	<100	66	<100	17	<100	<100	Project: Midway - Kern PP 230kV
Kern PP -Magunden 115kV line	P2-4:A15:7:_KERN PWR 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	161	<100	<100	<100	34	<100	60	<100	NA	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	109	130	34	41	9	12	40	129	NA	Project: NE Kern 115kV Area Reinforcement
Kern PP-7th Standard 115kV line	P2-1:A15:52:_LERDO-KERN OIL-7TH STANDARD 115KV [1950] (LRDO JCT-KERN OIL)	P2	Line w/o Fault	88	93	103	6	41	35	42	93	<100	Continue to Monitor
	P2-2:A15:20:_KERN OIL 115KV SECTION 1D	P2	Bus	89	94	102	6	41	35	42	94	<100	Continue to Monitor
	P2-2:A15:32:_KERN PWR 115KV SECTION 2E	P2	Bus	106	<100	<100	<100	79	<100	34	<100	<100	Project: NE Kern 115kV Area Reinforcement
	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	116	108	73	42	43	33	24	108	108	Project: NE Kern 115kV Area Reinforcement
	P2-3:A15:146:_KERN OIL - 1D 115KV & KERN OIL-LIVEOAKSWSTA-KERN OIL-POSO MT LINE	P2	Non-Bus Tie Breaker	<100	95	102	6	<100	35	<100	95	<100	Continue to Monitor
	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	116	108	73	42	43	33	24	108	108	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:2:_KERN OIL 115KV - SECTION 1D & 1E	P2	Bus Tie Breaker	89	94	102	6	41	35	42	94	<100	Continue to Monitor
	P2-4:A15:6:_KERN PWR 115KV - SECTION 1E & 2E	P2	Bus Tie Breaker	181	<100	<100	<100	79	<100	41	<100	<100	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:7:_KERN PWR 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	145	<100	<100	<100	37	<100	29	<100	108	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	116	108	73	42	43	33	24	108	<100	Project: NE Kern 115kV Area Reinforcement
Kern PP-Kern Oil 115kV line	P2-3:A15:136:_TAFT 115KV - RING R2 & R1	P2	Non-Bus Tie Breaker	30	34	32	101	54	72	49	34	<100	Operating Solution
	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	17	26	23	104	44	75	51	19	<100	Operating Solution
	P1-2:A15:41:_7TH STANDARD-KERN 115KV [1981]	P3	G-1/N-1	147	161	Diverge	<100	161	<100	<100	161	161	Under review
	P1-2:A15:49:_KERN-MAGUNDEN-WITCO 115KV [1970]	P3	G-1/N-1	96	91	106	<100	<100	<100	<100	<100	<100	Continue to Monitor
Kern PP-Magnuden 115kV line	P1-2:A15:113:_KERN OIL-LIVEOAKSWSTA-KERN OIL-POSO MT 115KV [0] MOAS OPENED ON CRCKERNFRNTJ_POSO MT	P6	N-1-1	Diverge	Diverge	127	<100	<100	<100	<100	<100	111	Continue to monitor
	P1-2:A15:38:_WESTPARK-COLUMBUS 115KV [0]P1-2:A15:41:_7TH STANDARD-KERN 115KV [1981]	P6	N-1-1	112	Diverge	98	<100	<100	<100	<100	<100	<100	Project: NE Kern 115kV Area Reinforcement
Kern Ridge-Temblor 115kV line	P5-5C(DC):A15:7:_MIDWAY 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-redundant relay	22	21	16	13	10	20	110	21	Diverge	Sensitivity only
Kern Ridge-Temblor 115kV line	P7-1:A15:8:_MIDSUN-MIDWAY & MIDWAY-TEMBLOR 115 KV LINES	P7	DCTL	21.4	21.09	16.33	<100	11.28	<100	109.6	<100	20.94	Sensitivity only
Lerdo-Kern Oil 115kV line	P1-2:A15:41:_7TH STANDARD-KERN 115KV [1981]P1-2:A15:47:_KERN OIL-WITCO 115KV [1920]	P6	N-1-1	155	175	115	<100	<100	<100	<100	<100	<100	Review Project: NE Kern 115kV Area Reinforcement
Lerdo-Kern Oil-7th Standard	P2-2:A15:33:_KERN PWR 115KV SECTION 2D	P2	Bus	112	<100	<100	<100	58	<100	58	<100	<100	Project: NE Kern 115kV Area Reinforcement
	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	109	130	34	41	9	12	40	129	108	Project: NE Kern 115kV Area Reinforcement
	P2-3:A15:148:_KERN PWR 115KV - MIDDLE BREAKER BAY 1	P2	Non-Bus Tie Breaker	<100	132	80	5	<100	51	<100	133	<100	Project: NE Kern 115kV Area Reinforcement
	P2-3:A15:57:_KERN PWR - 2D 115KV & KERN-STOCKDALE-LAMONT #2 LINE	P2	Non-Bus Tie Breaker	113	<100	<100	<100	58	<100	58	<100	<100	Project: NE Kern 115kV Area Reinforcement
	P2-3:A15:58:_KERN PWR - 2D 115KV & KERN PWR-DOUBLE C LINE	P2	Non-Bus Tie Breaker	112	<100	<100	<100	58	<100	58	<100	<100	Project: NE Kern 115kV Area Reinforcement
	P2-3:A15:69:_MIDWAY - 2E 115KV & SMYRNA-SEMITROPIC-MIDWAY LINE	P2	Non-Bus Tie Breaker	138	146	50	6	21	30	52	148	<100	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	192	197	50	90	21	30	67	197	108	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:19:_MIDWAY-DB8SB SECTION 2D & MIDWAY-E SECTION 2E 230KV	P2	Bus Tie Breaker	115	<100	<100	<100	16	<100	3	<100	<100	Project: NE Kern 115kV Area Reinforcement
Lerdo-Lerdo Junction 115kV line	P2-4:A15:6:_KERN PWR 115KV - SECTION 1E & 2E	P2	Bus Tie Breaker	175	<100	<100	<100	59	<100	15	<100	NA	Project: NE Kern 115kV Area Reinforcement
	P1-2:A15:31:_WSCOPRSN-SEMITROPIC_D-CHARKA 115KV [0]	P3	G-1/N-1	126	130	120	<100	<100	<100	<100	131	132	Review Project: NE Kern 115kV Area Reinforcement
Midway Bus Section Breaker	P2-3:A15:22:_MIDWAY-DB8SB - 2D 230KV & MIDWAY-DB8SB-MIDWAY-R12 #1 LINE	P2	Non-Bus Tie Breaker	93	<100	<100	<100	105	<100	73	<100	NA	Operating Solution
	P2-1:A15:110:_MIDWAY-TEMBLOR 115KV [2630] (TEMBLOR-PSE MCKJ)	P2	Line w/o Fault	21	21	14	7	11	20	128	21	<100	Sensitivity only
	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line w/o Fault	52	53	43	102	46	58	51	52	<100	Operating Solution
	P2-1:A15:35:_MIDWAY-TEMBLOR 115KV [2630] (PSE MCKJ-BELRDG J)	P2	Line w/o Fault	56	58	47	65	50	63	128	57	<100	Sensitivity only
	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	52	53	43	102	46	58	51	52	<100	Operating Solution

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				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
Midway-Carrizo 115kV line	P2-3:A15:70:_MIDWAY - 2D 115KV & MIDWAY-TEMBLOR LINE	P2	Non-Bus Tie Breaker	21	21	14	7	11	20	128	21	<100	Sensitivity only
	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-Bus Tie Breaker	52	53	43	102	46	58	51	52	<100	Operating Solution
	P2-3:A15:81:_PUMPJACK - 1D 115KV & LINE	P2	Non-Bus Tie Breaker	21	21	14	7	11	20	128	21	<100	Sensitivity only
	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Bus Tie Breaker	52	53	43	101	46	58	51	52	<100	Operating Solution
	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	52	53	43	102	46	58	51	52	<100	Operating Solution
Midway-Kern PP 115kV line	Base Case	P0	Base Case	92	102	42	15	43	8	56	103	TBD	Project: NE Kern 115kV Area Reinforcement
	P2-1:A15:80:_MIDWAY-TUPMAN-RIO BRAVO-RENFRO 115KV [2600] (TPMNT2-RENFRICT)	P2	Line w/o Fault	170	193	64	20	75	23	85	195	<100	Project: NE Kern 115kV Area Reinforcement
	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	142	140	<100	89	<100	<100	73	139	108	Project: NE Kern 115kV Area Reinforcement
	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	142	140	5	82	5	5	67	139	129	Project: NE Kern 115kV Area Reinforcement
	P2-3:A15:53:_TUPMAN - 1E 115KV & MIDWAY-TUPMAN-RIO BRAVO-RENFRO LINE	P2	Non-Bus Tie Breaker	134	158	51	28	54	4	94	159	<100	Project: NE Kern 115kV Area Reinforcement
	P2-3:A15:68:_RENFRO2 - 1F 115KV & MIDWAY-TUPMAN-RIO BRAVO-RENFRO LINE	P2	Non-Bus Tie Breaker	134	158	51	28	54	4	94	159	<100	Project: NE Kern 115kV Area Reinforcement
	P2-3:A15:72:_MIDWAY - 1E 115KV & MIDWAY-TUPMAN-RIO BRAVO-RENFRO LINE	P2	Non-Bus Tie Breaker	135	158	50	28	54	4	95	160	<100	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	142	140	<100	89	<100	<100	73	139	108	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	142	140	5	82	5	5	67	139	129	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:7:_KERN PWR 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	110	<100	<100	<100	<100	<100	32	<100	108	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:7:_KERN PWR 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	101	<100	<100	<100	<100	<100	25	<100	129	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	142	140	<100	90	<100	<100	73	139	108	Project: NE Kern 115kV Area Reinforcement
Midway-Kern PP 230kV line	P2-4:A15:19:_MIDWAY-DBSB SECTION 2D & MIDWAY-E SECTION 2E 230KV	P2	Bus Tie Breaker	117	Diverge	Diverge	Diverge	103	Diverge	13	Diverge	NA	Under review
Midway-Rio Bravo 115kV line	P1-2:A15:54:_MIDWAY-RENFRO-TUPMAN 115KV [2590]	P1	N-1	101	110	45	15	49	12	56	49	<100	Project: NE Kern 115kV Area Reinforcement
	P1-2:A15:56:_MIDWAY-TUPMAN-RIO BRAVO-RENFRO 115KV [2600]	P1	N-1	134	158	51	28	54	4	94	53	<100	Project: NE Kern 115kV Area Reinforcement
	P1-2:A15:63:_MIDWAY-SHAFTER 115KV [2610]	P1	N-1	134	157	51	28	54	8	94	54	<100	Project: NE Kern 115kV Area Reinforcement
Midway-Semitropic 115kV line	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant battery	126	113	21	55	49	16	19	114	121	Project: NE Kern 115kV Area Reinforcement
	P1-2:A15:53:_SEMITROPIC-MIDWAY #1 115KV [3630]P1-2:A15:34:_SMYRNA-SEMITROPIC-MIDWAY 115KV [3710] MOAS OPENED ON GANSO_MIDWAY	P6	N-1-1	107	108	Diverge	<100	<100	<100	<100	<100	<100	Under review
Midway-Shafter 115kV line	P5-5A(NRDR):A15:15:_TUPMAN 115KV BUS 1D (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-redundant relay	134	158	51	28	54	4	94	159	159	Project: NE Kern 115kV Area Reinforcement
	P5-5A(NRDR):A15:7:_RENFRO 115KV (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-redundant relay	134	158	51	28	54	4	94	159	159	Project: NE Kern 115kV Area Reinforcement
	P1-2:A15:54:_MIDWAY-RENFRO-TUPMAN 115KV [2590]	P6	N-1-1	Diverge	108	Diverge	<100	<100	<100	<100	<100	109	Under review
	P7-1:A15:7:_MIDWAY-TUPMAN-RENFRO & MIDWAY-TUPMAN-RIO BRAVO-RE	P7	DCTL	134	158	51	<100	54	<100	94	<100	159	Operating Solution
Midway-Taft 115kV line	P5-5C(DC):A15:4:_KERN 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-redundant relay	Diverge	Diverge	Diverge	56	19	30	29	Diverge	Diverge	Install Redundant Battery Supply
Midway-Tembler 115kV line	P7-1:A15:14:_CALIENTE SW STA - MIDWAY #1 & #2 230 KV LINES	P7	DCTL	11.44	10.66	10.3	<100	68.9	<100	102.47	<100	9.96	Sensitivity only
Midway-Tupman 115kV line	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	183	199	160	29	92	13	107	201	201.18	Mitigation Under Review
Midway-Tupman-Rio Bravo 115kV line	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	134	156	51	28	54	7	94	158	<100	Project: NE Kern 115kV Area Reinforcement
	P2-3:A15:133:_SHAFTER 115KV - RING R1 & R4	P2	Non-Bus Tie Breaker	82	107	33	20	36	6	53	109	<100	Project: NE Kern 115kV Area Reinforcement
	P2-3:A15:69:_MIDWAY - 2E 115KV & SMYRNA-SEMITROPIC-MIDWAY LINE	P2	Non-Bus Tie Breaker	134	157	51	27	54	7	93	158	<100	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	145	172	51	28	56	7	98	174	201	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	140	163	50	27	55	7	95	165	<100	Project: NE Kern 115kV Area Reinforcement
	P1-2:A15:109:_BITTERWATRSS-MIDWAY-D 230KV [0]	P1	N-1	Diverge	108	46	17	Diverge	93	Diverge	Diverge	109	Project: Wheeler Ridge Junction
	P2-1:A15:238:_MIDWAY-WHEELER RIDGE #1 230KV [5190] (BUENAVJ1-MIDWAY-D)	P2	Line w/o Fault	Diverge	119	50	7	Diverge	105	Diverge	114	114	Project: Wheeler Ridge Junction

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				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
Midway-Wheeler Ridge 230kV line	P2-1:A15:239:_MIDWAY-WHEELER RIDGE #2 230KV [5200] (BUENAVI2-MIDWAY-D)	P2	Line w/o Fault	Diverge	119	50	12	Diverge	104	Diverge	114	114	Project: Wheeler Ridge Junction
	P2-3:A15:13:_MIDWAY-E - 1E 230KV & LINE	P2	Non-Bus Tie Breaker	Diverge	100	100	101	Diverge	1	Diverge	100	<100	Project: Wheeler Ridge Junction
	P2-3:A15:140:_MIDWAY-D 230KV - MIDDLE BREAKER BAY 4	P2	Non-Bus Tie Breaker	Diverge	108	46	17	Diverge	93	Diverge	103	<100	Project: Wheeler Ridge Junction
Semitropic-Lerdo 115kV line	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	111	111	<100	100	<100	<100	93	109	196	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	111	111	<100	100	<100	<100	93	110	196	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:7:_KERN PWR 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	143	<100	<100	<100	27	<100	47	<100	196	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	111	111	<100	100	<100	<100	93	109	196	Project: NE Kern 115kV Area Reinforcement
	P1-2:A15:45:_LERDO-KERN OIL-7TH STANDARD 115KV [1950]	P3	G-1/N-1	144	153	Diverge	<100	<100	<100	<100	139	154	Under review
	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant battery	280	242	35	63	27	10	70	246	246	Project: NE Kern 115kV Area Reinforcement
	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	279	242	35	63	27	10	70	246	246	Project: NE Kern 115kV Area Reinforcement
	P5-5C(DC):A15:4:_KERN 230KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	Diverge	Diverge	Diverge	96	31	10	54	Diverge	Diverge	Install Redundant Battery Supply
	P1-2:A15:45:_LERDO-KERN OIL-7TH STANDARD 115KV [1950]P1-1:A15:32:_MT POSO 13.80KV GEN UNIT 1	P6	N-1-1	104	113	Diverge	<100	<100	<100	<100	<100	154	Under review
Shafter-Rio Bravo 115kV line	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	86	99	41	18	33	5	62	100	100	Operating Solution
	P2-3:A15:69:_MIDWAY - 2E 115KV & SMYRNA-SEMITROPIC-MIDWAY LINE	P2	Non-Bus Tie Breaker	86	100	41	18	33	5	62	100	100	Operating Solution
	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	93	110	43	18	35	5	65	110	110	Project: NE Kern 115kV Area Reinforcement
	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	90	104	42	18	34	5	63	105	104	Project: NE Kern 115kV Area Reinforcement
Tembler-Carrizo 115kV line	P7-1:A15:14:_CALIENTE SW STA - MIDWAY #1 & #2 230 KV LINES	P7	DCTL	59	48	26	<100	117	<100	72	<100	52	Operating Solution
	P7-1:A15:8:_MIDSUN-MIDWAY & MIDWAY-TEMBLOR 115 KV LINES	P7	DCTL	21.02	20.92	13.64	<100	11.03	<100	128.03	<100	20.87	Sensitivity only
	P5-5C(DC):A15:1:_MIDWAY 500KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	Diverge	Diverge	Diverge	Diverge	Diverge	Diverge	Diverge	Diverge	Diverge	Install Redundant Battery Supply
	P5-5C(DC):A15:4:_KERN 230KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	Diverge	Diverge	Diverge	42	10	18	25	Diverge	Diverge	Install Redundant Battery Supply
Tembler-Kern Ridge 115kV line	P5-5C(DC):A15:7:_MIDWAY 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	21	21	12	12	9	20	128	21	Diverge	Operating Solution
	P1-2:A15:28:_MIDWAY-WHEELER RIDGE #1 230KV [5190]	P1	N-1	64	64	23	16	105	72	10	57	<100	Operating Solution
	P1-2:A15:36:_MIDWAY-TEMBLOR 115KV [2630]	P1	N-1	21	21	14	7	11	20	128	9	<100	Sensitivity only
	P2-1:A15:110:_MIDWAY-TEMBLOR 115KV [2630] (TEMBLOR-PSE MCKJ)	P2	Line w/o Fault	21	21	16	10	11	20	110	21	<100	Sensitivity only
	P2-1:A15:35:_MIDWAY-TEMBLOR 115KV [2630] (PSE MCKJ-BELRDG J)	P2	Line w/o Fault	22	22	10	12	10	19	110	22	<100	Sensitivity only
	P2-3:A15:70:_MIDWAY - 2D 115KV & MIDWAY-TEMBLOR LINE	P2	Non-Bus Tie Breaker	21	21	16	11	11	20	110	21	<100	Sensitivity only
Tembler-Carrizo 115kV line	P2-3:A15:81:_PUMPJACK - 1D 115KV & LINE	P2	Non-Bus Tie Breaker	21	21	16	10	11	20	110	21	<100	Sensitivity only
	P1-2:A15:10:_CALIENTE SW STA-MIDWAY #2 230KV [5226]	P6	N-1-1	<100	<100	<100	117	<100	<100	<100	<100	<100	Operating Solution
Wheeler Ridge-Taft 70kV line	P7-1:A15:1:_KERN-OLD RIVER NO. 1 & 2 70 KV LINES	P7	DCTL	64	59	57	<100	21	<100	111	<100	61	Operating Solution

Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
KERNRDGE_L19	P1-2:A15:36:_MIDWAY-TEMBLOR 115KV [2630]	P1	N-1	0.87	0.88	0.97	0.97	0.97	0.92	0.50	0.97	TBD	Generation Redispatch
KERNRDGE_L04	P1-2:A15:36:_MIDWAY-TEMBLOR 115KV [2630]	P1	N-1	0.87	0.88	0.97	0.97	0.97	0.92	0.49	0.97	TBD	Generation Redispatch
KERNRDGE_L19	P1-3:A15:109:_KERNRDGELH 69/4.16KV TB 1	P1	N-1	0.94	0.93	0.96	0.96	0.96	0.95	0.88	0.96	TBD	Sensitivity Only
KERNRDGE_L18	P1-2:A15:36:_MIDWAY-TEMBLOR 115KV [2630]	P1	N-1	0.94	0.95	1.03	1.03	1.03	0.99	0.53	1.03	TBD	Sensitivity Only
KERNRDGE_L04	P1-3:A15:109:_KERNRDGELH 69/4.16KV TB 1	P1	N-1	0.94	0.94	0.96	0.96	0.96	0.95	0.89	0.96	TBD	Sensitivity Only
KERNRDGE_L34	P1-2:A15:36:_MIDWAY-TEMBLOR 115KV [2630]	P1	N-1	0.94	0.95	1.03	1.03	1.03	0.99	0.53	1.03	TBD	Sensitivity Only
KERNRDGE_L32	P1-2:A15:36:_MIDWAY-TEMBLOR 115KV [2630]	P1	N-1	0.94	0.95	1.03	1.03	1.03	1.00	0.53	1.03	TBD	Sensitivity Only
KERNRDGE_L11	P1-2:A15:36:_MIDWAY-TEMBLOR 115KV [2630]	P1	N-1	0.94	0.95	1.03	1.03	1.03	1.00	0.53	1.03	TBD	Sensitivity Only
KERNRDGE	P1-2:A15:36:_MIDWAY-TEMBLOR 115KV [2630]	P1	N-1	0.94	0.95	1.04	1.04	1.04	1.00	0.54	1.04	TBD	Sensitivity Only
TEMBLOR	P1-2:A15:36:_MIDWAY-TEMBLOR 115KV [2630]	P1	N-1	0.95	0.96	1.03	1.04	1.04	1.00	0.56	1.04	TBD	Sensitivity Only
CARNATIO	P2-4:A15:27:_KERN PW2 SECTION 2D & KERN PW1 SECTION 1D 70KV	P2	Bus Tie Breaker	0.55	0.56	0.42	1.03	NA	NA	1.07	0.56	TBD	Load forecast under review
PANAMA	P2-4:A15:27:_KERN PW2 SECTION 2D & KERN PW1 SECTION 1D 70KV	P2	Bus Tie Breaker	0.56	0.57	0.43	1.04	NA	NA	1.08	0.57	TBD	Load forecast under review
OLD RIVR	P2-4:A15:27:_KERN PW2 SECTION 2D & KERN PW1 SECTION 1D 70KV	P2	Bus Tie Breaker	0.57	0.58	0.50	1.04	NA	NA	1.07	0.58	TBD	Load forecast under review
OLD_RVR1	P2-4:A15:27:_KERN PW2 SECTION 2D & KERN PW1 SECTION 1D 70KV	P2	Bus Tie Breaker	0.57	0.58	0.50	1.04	NA	NA	1.07	0.58	TBD	Load forecast under review
SAN EMDO	P2-4:A15:27:_KERN PW2 SECTION 2D & KERN PW1 SECTION 1D 70KV	P2	Bus Tie Breaker	0.67	0.68	0.62	1.04	NA	NA	1.06	0.67	TBD	Load forecast under review
S_KERN	P2-4:A15:27:_KERN PW2 SECTION 2D & KERN PW1 SECTION 1D 70KV	P2	Bus Tie Breaker	0.77	0.78	0.74	1.04	NA	NA	1.05	0.78	TBD	Load forecast under review
COPUS_E	P2-4:A15:27:_KERN PW2 SECTION 2D & KERN PW1 SECTION 1D 70KV	P2	Bus Tie Breaker	0.82	0.83	0.80	1.03	1.02	1.03	1.04	0.83	TBD	Load forecast under review
BSC_LPD	P2-4:A15:27:_KERN PW2 SECTION 2D & KERN PW1 SECTION 1D 70KV	P2	Bus Tie Breaker	0.82	0.83	0.80	1.03	1.02	1.03	1.04	0.83	TBD	Load forecast under review
MC FRLND	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.83	0.82	1.00	1.01	1.00	1.05	0.96	0.82	TBD	Project: Kern 115kV Reinforcement
MC FRLND	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.83	0.83	1.00	1.01	1.00	1.05	0.96	0.83	TBD	Project: Kern 115kV Reinforcement
MC FRLND	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.83	0.83	1.00	1.01	1.00	1.05	0.96	0.83	TBD	Project: Kern 115kV Reinforcement
WASCO	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.84	0.84	NA	1.01	NA	NA	0.98	0.84	TBD	Project: Kern 115kV Reinforcement
WASCO	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.84	0.84	NA	1.01	NA	NA	0.98	0.84	TBD	Project: Kern 115kV Reinforcement
WASCO	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.85	0.84	NA	1.01	NA	NA	0.98	0.84	TBD	Project: Kern 115kV Reinforcement
GOSE LKE	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.86	0.85	NA	1.05	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
GOSE LKE	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.86	0.85	NA	1.05	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
GOSE LKE	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.86	0.85	NA	1.05	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
WILDWOOD1	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.86	0.85	NA	1.05	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
WILDWOOD2	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.86	0.85	NA	1.05	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
WILDWOOD1	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.86	0.85	NA	1.05	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
WILDWOOD1	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.86	0.85	NA	1.05	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
WILDWOOD2	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.86	0.85	NA	1.05	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement

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Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
WILDWOOD2	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.86	0.85	NA	1.05	NA	NA	1.03	0.85	TBD	Project: Kern 115kV Reinforcement
SMTRPCWS	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.87	0.85	NA	1.05	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
SEMITROPIC_E	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.87	0.85	NA	1.05	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
SEMIREAC	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.87	0.85	NA	1.04	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
KERNRDGE_L19	P2-1:A15:110:_MIDWAY-TEMBLOR 115KV [2630] (TEMBLOR-PSE MCKJ)	P2	Line section w/o fault	0.87	0.88	0.97	0.97	0.97	0.92	0.50	0.87	TBD	Project: Kern 115kV Reinforcement
KERNRDGE_L19	P2-3:A15:70:_MIDWAY - 2D 115KV & MIDWAY-TEMBLOR LINE	P2	Non-bus tie breaker	0.87	0.88	0.97	0.97	0.97	0.92	0.50	0.87	TBD	Project: Kern 115kV Reinforcement
KERNRDGE_L19	P2-3:A15:81:_PUMPJACK - 1D 115KV & LINE	P2	Non-bus tie breaker	0.87	0.88	0.97	0.97	0.97	0.92	0.50	0.87	TBD	Project: Kern 115kV Reinforcement
MCKIBBEN	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.87	0.85	NA	1.03	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
PONDROAD	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.87	0.85	NA	1.03	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
SMYRNA	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.87	0.85	NA	1.03	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
SMTRPCWS	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.87	0.85	NA	1.05	NA	NA	1.02	0.86	TBD	Project: Kern 115kV Reinforcement
SMTRPCWS	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.87	0.85	NA	1.05	NA	NA	1.02	0.86	TBD	Project: Kern 115kV Reinforcement
KERNRDGE_L04	P2-1:A15:110:_MIDWAY-TEMBLOR 115KV [2630] (TEMBLOR-PSE MCKJ)	P2	Line section w/o fault	0.87	0.88	0.97	0.97	0.97	0.92	0.49	0.88	TBD	Project: Kern 115kV Reinforcement
SEMITROPIC_E	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.87	0.85	NA	1.05	NA	NA	1.02	0.86	TBD	Project: Kern 115kV Reinforcement
SEMITROPIC_E	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.87	0.85	NA	1.05	NA	NA	1.02	0.86	TBD	Project: Kern 115kV Reinforcement
SEMIREAC	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.87	0.85	NA	1.04	NA	NA	1.02	0.86	TBD	Project: Kern 115kV Reinforcement
KERNRDGE_L04	P2-3:A15:70:_MIDWAY - 2D 115KV & MIDWAY-TEMBLOR LINE	P2	Non-bus tie breaker	0.87	0.88	0.97	0.97	0.97	0.92	0.49	0.88	TBD	Project: Kern 115kV Reinforcement
KERNRDGE_L04	P2-3:A15:81:_PUMPJACK - 1D 115KV & LINE	P2	Non-bus tie breaker	0.87	0.88	0.97	0.97	0.97	0.92	0.49	0.88	TBD	Project: Kern 115kV Reinforcement
SEMIREAC	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.87	0.85	NA	1.04	NA	NA	1.02	0.86	TBD	Project: Kern 115kV Reinforcement
MCKIBBEN	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.87	0.85	NA	1.03	NA	NA	1.02	0.86	TBD	Project: Kern 115kV Reinforcement
GANSO	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.87	0.85	NA	1.04	NA	NA	1.02	0.86	TBD	Project: Kern 115kV Reinforcement
MCKIBBEN	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.87	0.85	NA	1.03	NA	NA	1.02	0.86	TBD	Project: Kern 115kV Reinforcement
PONDROAD	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.87	0.85	NA	1.03	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
SMYRNA	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.87	0.85	NA	1.03	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement

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Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
PONDROAD	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.87	0.85	NA	1.03	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
SMYRNA	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.87	0.85	NA	1.03	NA	NA	1.02	0.85	TBD	Project: Kern 115kV Reinforcement
GANSO	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.87	0.85	NA	1.04	NA	NA	1.02	0.86	TBD	Project: Kern 115kV Reinforcement
GANSO	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.87	0.85	NA	1.04	NA	NA	1.02	0.86	TBD	Project: Kern 115kV Reinforcement
WSCOPRSN	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.87	0.86	NA	1.04	NA	NA	1.02	0.86	TBD	Project: Kern 115kV Reinforcement
MRCPAWST	P2-4:A15:27:_KERN PW2 SECTION 2D & KERN PW1 SECTION 1D 70KV	P2	Bus Tie Breaker	0.87	0.88	0.85	1.03	1.02	1.03	1.04	0.88	TBD	Load forecast under review
WSCOPRSN	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.87	0.86	NA	1.04	NA	NA	1.02	0.86	TBD	Project: Kern 115kV Reinforcement
WSCOPRSN	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.87	0.86	NA	1.04	NA	NA	1.02	0.86	TBD	Project: Kern 115kV Reinforcement
ATWELL_ISL	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.87	0.86	NA	1.03	NA	NA	1.03	0.86	TBD	Project: Kern 115kV Reinforcement
ATWELLW	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.87	0.86	NA	1.03	NA	NA	1.03	0.86	TBD	Project: Kern 115kV Reinforcement
MC FRLND	P2-3:A15:69:_MIDWAY - 2E 115KV & SMYRNA-SEMITROPIC-MIDWAY LINE	P2	Non-bus tie breaker	0.87	0.87	1.00	1.02	1.00	1.05	0.95	0.87	TBD	Project: Kern 115kV Reinforcement
ATWELL_ISL	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.88	0.86	NA	1.03	NA	NA	1.03	0.86	TBD	Project: Kern 115kV Reinforcement
ATWELLW	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.88	0.86	NA	1.03	NA	NA	1.03	0.86	TBD	Project: Kern 115kV Reinforcement
ATWELL_ISL	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.88	0.86	NA	1.03	NA	NA	1.03	0.86	TBD	Project: Kern 115kV Reinforcement
ATWELLW	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.88	0.86	NA	1.03	NA	NA	1.03	0.86	TBD	Project: Kern 115kV Reinforcement
CHARKA	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.88	0.87	NA	1.04	NA	NA	1.01	0.87	TBD	Project: Kern 115kV Reinforcement
SHAFTER	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.88	0.86	0.94	1.04	0.97	1.07	0.94	0.86	TBD	Project: Kern 115kV Reinforcement
CHARKA	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.88	0.87	NA	1.04	NA	NA	1.01	0.87	TBD	Project: Kern 115kV Reinforcement
CHARKA	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.88	0.87	NA	1.04	NA	NA	1.01	0.87	TBD	Project: Kern 115kV Reinforcement
GARDNER	P2-4:A15:27:_KERN PW2 SECTION 2D & KERN PW1 SECTION 1D 70KV	P2	Bus Tie Breaker	0.88	0.89	0.87	1.03	1.02	1.03	1.03	0.89	TBD	Load forecast under review
FAMOSO	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.89	0.88	1.02	1.02	1.01	1.05	0.99	0.88	TBD	Project: Kern 115kV Reinforcement
FAMOSO	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.89	0.88	1.02	1.02	1.01	1.05	0.99	0.88	TBD	Project: Kern 115kV Reinforcement
7STNDRD	P2-4:A15:7:_KERN PWR 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.89	NA	NA	NA	NA	NA	0.98	NA	TBD	Project: Kern 115kV Reinforcement
FAMOSO	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.89	0.88	1.02	1.02	1.01	1.05	0.99	0.88	TBD	Project: Kern 115kV Reinforcement
WASCO	P2-3:A15:69:_MIDWAY - 2E 115KV & SMYRNA-SEMITROPIC-MIDWAY LINE	P2	Non-bus tie breaker	0.89	0.88	NA	1.02	NA	NA	0.96	0.88	TBD	Project: Kern 115kV Reinforcement
FAMOSO	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.90	0.89	NA	1.04	NA	NA	1.01	0.89	TBD	Project: Kern 115kV Reinforcement

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Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
KERNWTR_LD	P2-4:A15:7:_KERN PWR 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.90	NA	NA	NA	NA	NA	0.98	NA	TBD	Project: Kern 115kV Reinforcement
FAMOSO	P2-2:A15:41:_MIDWAY 115KV SECTION 2E	P2	Bus	0.90	0.89	NA	1.04	NA	NA	1.01	0.89	TBD	Project: Kern 115kV Reinforcement
FAMOSO	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.90	0.89	NA	1.04	NA	NA	1.01	0.89	TBD	Project: Kern 115kV Reinforcement
RIO BRVO	P2-4:A15:10:_MIDWAY 115KV - SECTION 2E & 1E	P2	Bus Tie Breaker	0.91	0.89	0.95	1.04	0.98	1.07	0.96	0.89	TBD	Project: Kern 115kV Reinforcement
KERNRDGE_L19	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.93	0.93	0.97	0.97	0.97	0.95	0.77	0.93	TBD	Sensitivity Only
KERNRDGE_L19	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line section w/o fault	0.93	0.93	0.97	0.97	0.97	0.95	0.77	0.93	TBD	Sensitivity Only
KERNRDGE_L19	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	0.93	0.93	0.97	0.97	0.97	0.95	0.77	0.93	TBD	Sensitivity Only
KERNRDGE_L19	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-bus tie breaker	0.93	0.93	0.97	0.97	0.97	0.95	0.77	0.93	TBD	Sensitivity Only
KERNRDGE_L19	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Bus Tie Breaker	0.93	0.93	0.97	0.97	0.97	0.95	0.77	0.93	TBD	Sensitivity Only
KERNRDGE_L04	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	0.93	0.94	0.97	0.97	0.97	0.95	0.77	0.94	TBD	Sensitivity Only
KERNRDGE_L04	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line section w/o fault	0.93	0.94	0.97	0.97	0.97	0.95	0.77	0.94	TBD	Sensitivity Only
KERNRDGE_L04	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	0.93	0.94	0.97	0.97	0.97	0.95	0.77	0.94	TBD	Sensitivity Only
KERNRDGE_L04	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-bus tie breaker	0.93	0.94	0.97	0.97	0.97	0.95	0.77	0.94	TBD	Sensitivity Only
KERNRDGE_L04	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Bus Tie Breaker	0.93	0.94	0.97	0.97	0.97	0.95	0.77	0.94	TBD	Sensitivity Only
KERNRDGE_L19	P2-1:A15:35:_MIDWAY-TEMBLOR 115KV [2630] (PSE MCKJ-BELRDG J)	P2	Line section w/o fault	0.94	0.94	0.97	0.97	0.97	0.95	0.50	0.94	TBD	Sensitivity Only
KERNRDGE_L04	P2-1:A15:35:_MIDWAY-TEMBLOR 115KV [2630] (PSE MCKJ-BELRDG J)	P2	Line section w/o fault	0.94	0.94	0.97	0.97	0.97	0.95	0.49	0.94	TBD	Sensitivity Only
KERNRDGE_L18	P2-1:A15:110:_MIDWAY-TEMBLOR 115KV [2630] (TEMBLOR-PSE MCKJ)	P2	Line section w/o fault	0.94	0.95	1.03	1.03	1.03	0.99	0.53	0.95	TBD	Sensitivity Only
KERNRDGE_L18	P2-3:A15:70:_MIDWAY - 2D 115KV & MIDWAY-TEMBLOR LINE	P2	Non-bus tie breaker	0.94	0.95	1.03	1.03	1.03	0.99	0.53	0.95	TBD	Sensitivity Only
KERNRDGE_L18	P2-3:A15:81:_PUMPJACK - 1D 115KV & LINE	P2	Non-bus tie breaker	0.94	0.95	1.03	1.03	1.03	0.99	0.53	0.95	TBD	Sensitivity Only
KERNRDGE_L34	P2-1:A15:110:_MIDWAY-TEMBLOR 115KV [2630] (TEMBLOR-PSE MCKJ)	P2	Line section w/o fault	0.94	0.95	1.03	1.03	1.03	0.99	0.53	0.95	TBD	Sensitivity Only

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Study Area: Kern

Low Voltages



Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
KERNRDGE_L34	P2-3:A15:70:_MIDWAY - 2D 115KV & MIDWAY-TEMBLOR LINE	P2	Non-bus tie breaker	0.94	0.95	1.03	1.03	1.03	0.99	0.53	0.95	TBD	Sensitivity Only
KERNRDGE_L34	P2-3:A15:81:_PUMPJACK - 1D 115KV & LINE	P2	Non-bus tie breaker	0.94	0.95	1.03	1.03	1.03	0.99	0.53	0.95	TBD	Sensitivity Only
KERNRDGE_L32	P2-1:A15:110:_MIDWAY-TEMBLOR 115KV [2630] (TEMBLOR-PSE MCKJ)	P2	Line section w/o fault	0.94	0.95	1.03	1.03	1.03	0.99	0.53	0.95	TBD	Sensitivity Only
KERNRDGE_L32	P2-3:A15:70:_MIDWAY - 2D 115KV & MIDWAY-TEMBLOR LINE	P2	Non-bus tie breaker	0.94	0.95	1.03	1.03	1.03	1.00	0.53	0.95	TBD	Sensitivity Only
KERNRDGE_L32	P2-3:A15:81:_PUMPJACK - 1D 115KV & LINE	P2	Non-bus tie breaker	0.94	0.95	1.03	1.03	1.03	1.00	0.53	0.95	TBD	Sensitivity Only
KERNRDGE_L11	P2-1:A15:110:_MIDWAY-TEMBLOR 115KV [2630] (TEMBLOR-PSE MCKJ)	P2	Line section w/o fault	0.94	0.95	1.03	1.03	1.03	1.00	0.53	0.95	TBD	Sensitivity Only
KERNRDGE_L11	P2-3:A15:70:_MIDWAY - 2D 115KV & MIDWAY-TEMBLOR LINE	P2	Non-bus tie breaker	0.94	0.95	1.03	1.03	1.03	1.00	0.53	0.95	TBD	Sensitivity Only
KERNRDGE_L11	P2-3:A15:81:_PUMPJACK - 1D 115KV & LINE	P2	Non-bus tie breaker	0.94	0.95	1.03	1.03	1.03	1.00	0.53	0.95	TBD	Sensitivity Only
KERNRDGE	P2-1:A15:110:_MIDWAY-TEMBLOR 115KV [2630] (TEMBLOR-PSE MCKJ)	P2	Line section w/o fault	0.94	0.95	1.04	1.04	1.04	1.00	0.54	0.95	TBD	Sensitivity Only
KERNRDGE	P2-3:A15:70:_MIDWAY - 2D 115KV & MIDWAY-TEMBLOR LINE	P2	Non-bus tie breaker	0.94	0.95	1.04	1.04	1.04	1.00	0.54	0.95	TBD	Sensitivity Only
KERNRDGE	P2-3:A15:81:_PUMPJACK - 1D 115KV & LINE	P2	Non-bus tie breaker	0.94	0.95	1.04	1.04	1.04	1.00	0.54	0.95	TBD	Sensitivity Only
TEMBLOR	P2-1:A15:110:_MIDWAY-TEMBLOR 115KV [2630] (TEMBLOR-PSE MCKJ)	P2	Line section w/o fault	0.95	0.96	1.03	1.04	1.04	1.00	0.56	0.95	TBD	Sensitivity Only
TEMBLOR	P2-3:A15:70:_MIDWAY - 2D 115KV & MIDWAY-TEMBLOR LINE	P2	Non-bus tie breaker	0.95	0.96	1.03	1.04	1.04	1.00	0.56	0.95	TBD	Sensitivity Only
TEMBLOR	P2-3:A15:81:_PUMPJACK - 1D 115KV & LINE	P2	Non-bus tie breaker	0.95	0.96	1.03	1.04	1.04	1.00	0.56	0.95	TBD	Sensitivity Only
KERNRDGE_L19	Base Case	P2	Base Case	0.95	0.95	0.97	0.97	0.97	0.96	0.92	0.95	TBD	Sensitivity Only
KERNRDGE_L04	Base Case	P2		0.95	0.95	0.97	0.97	0.97	0.96	0.92	0.95	TBD	Sensitivity Only
CARRIZO	P2-1:A15:110:_MIDWAY-TEMBLOR 115KV [2630] (TEMBLOR-PSE MCKJ)	P2	Line section w/o fault	0.97	0.98	1.02	1.03	1.02	1.02	0.71	0.98	TBD	Sensitivity Only

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Low Voltages



Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
CARRIZO	P2-3:A15:70:_MIDWAY - 2D 115KV & MIDWAY-TEMBLOR LINE	P2	Non-bus tie breaker	0.97	0.98	1.02	1.03	1.02	1.02	0.71	0.98	TBD	Sensitivity Only
CARRIZO	P2-3:A15:81:_PUMPJACK - 1D 115KV & LINE	P2	Non-bus tie breaker	0.97	0.98	1.02	1.03	1.02	1.02	0.71	0.98	TBD	Sensitivity Only
SHAFTER	Base Case		Base Case	1.00	0.99	1.02	1.04	1.03	1.06	1.02	1.00	TBD	Sensitivity Only
KERNRDGE_L18	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	1.00	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L18	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line section w/o fault	1.00	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L18	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	1.00	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L18	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-bus tie breaker	1.00	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L18	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Bus Tie Breaker	1.00	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L34	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L34	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line section w/o fault	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L34	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L34	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-bus tie breaker	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L34	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Bus Tie Breaker	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L32	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L32	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line section w/o fault	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L32	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L32	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-bus tie breaker	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L32	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Bus Tie Breaker	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L11	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L11	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line section w/o fault	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L11	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only

Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
KERNRDGE_L11	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-bus tie breaker	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
RIO BRVO	Base Case	Base Case	Base Case	1.01	1.00	1.01	1.04	1.03	1.06	1.02	1.00	TBD	Sensitivity Only
KERNRDGE_L11	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Bus Tie Breaker	1.01	1.01	1.03	1.03	1.03	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	1.01	1.01	1.04	1.04	1.04	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line section w/o fault	1.01	1.01	1.04	1.04	1.04	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	1.01	1.01	1.04	1.04	1.04	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-bus tie breaker	1.01	1.01	1.04	1.04	1.04	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Bus Tie Breaker	1.01	1.01	1.04	1.04	1.04	1.02	0.82	1.01	TBD	Sensitivity Only
KERNRDGE_L18	P2-1:A15:35:_MIDWAY-TEMBLOR 115KV [2630] (PSE MCKJ-BELRDG J)	P2	Line section w/o fault	1.01	1.01	1.03	1.03	1.03	1.02	0.53	1.01	TBD	Sensitivity Only
KERNRDGE_L34	P2-1:A15:35:_MIDWAY-TEMBLOR 115KV [2630] (PSE MCKJ-BELRDG J)	P2	Line section w/o fault	1.01	1.01	1.03	1.03	1.03	1.02	0.53	1.01	TBD	Sensitivity Only
BELRIDGE	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
BELRIDGE	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line section w/o fault	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
BELRIDGE	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
BELRIDGE	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-bus tie breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
BELRIDGE	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Bus Tie Breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
KERNRDGE_L32	P2-1:A15:35:_MIDWAY-TEMBLOR 115KV [2630] (PSE MCKJ-BELRDG J)	P2	Line section w/o fault	1.01	1.01	1.03	1.03	1.03	1.02	0.53	1.01	TBD	Sensitivity Only
CARRIZO	P2-1:A15:35:_MIDWAY-TEMBLOR 115KV [2630] (PSE MCKJ-BELRDG J)	P2	Line section w/o fault	1.01	1.01	1.02	1.03	1.02	1.03	0.71	1.01	TBD	Sensitivity Only
RIOBRAVO1	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
RIOBRVSLR2	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
PUMPJACK	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only

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Study Area: **Kern**

Low Voltages



Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
KERNRDGE_L11	P2-1:A15:35:_MIDWAY-TEMBLOR 115KV [2630] (PSE MCKJ-BELRDG J)	P2	Line section w/o fault	1.01	1.01	1.03	1.03	1.03	1.02	0.53	1.01	TBD	Sensitivity Only
RIOBRAVO1	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line section w/o fault	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
RIOBRAVO1	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
RIOBRAVO1	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-bus tie breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
RIOBRVSLR2	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line section w/o fault	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
RIOBRVSLR2	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
RIOBRVSLR2	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-bus tie breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
RIOBRVSLR2	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Bus Tie Breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
PUMPJACK	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line section w/o fault	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
PUMPJACK	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
PUMPJACK	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-bus tie breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
RIOBRAVO1	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Bus Tie Breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
PUMPJACK	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Bus Tie Breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.86	1.01	TBD	Sensitivity Only
PSE MCKJ	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.84	1.01	TBD	Sensitivity Only
TEMBLOR	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.84	1.01	TBD	Sensitivity Only
PSE MCKJ	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	1.01	1.01	1.04	1.04	1.04	1.03	0.84	1.01	TBD	Sensitivity Only
PSE MCKJ	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-bus tie breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.84	1.01	TBD	Sensitivity Only
TEMBLOR	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line section w/o fault	1.01	1.01	1.04	1.04	1.04	1.03	0.84	1.01	TBD	Sensitivity Only
TEMBLOR	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	1.01	1.01	1.04	1.04	1.04	1.03	0.84	1.01	TBD	Sensitivity Only
TEMBLOR	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-bus tie breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.84	1.01	TBD	Sensitivity Only
PSE MCKJ	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line section w/o fault	1.01	1.01	1.04	1.04	1.04	1.03	0.84	1.01	TBD	Sensitivity Only

2023-2024 ISO Reliability Assessment - Preliminary Study Results

Study Area: Kern

Low Voltages



Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
PSE MCKJ	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Bus Tie Breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.85	1.01	TBD	Sensitivity Only
KERNRDGE	P2-1:A15:35:_MIDWAY-TEMBLOR 115KV [2630] (PSE MCKJ-BELRDG J)	P2	Line section w/o fault	1.01	1.01	1.04	1.04	1.04	1.03	0.54	1.01	TBD	Sensitivity Only
TEMBLOR	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Bus Tie Breaker	1.01	1.01	1.04	1.04	1.04	1.03	0.85	1.01	TBD	Sensitivity Only
PSE MCKJ	P2-1:A15:35:_MIDWAY-TEMBLOR 115KV [2630] (PSE MCKJ-BELRDG J)	P2	Line section w/o fault	1.02	1.02	1.04	1.04	1.04	1.03	0.56	1.02	TBD	Sensitivity Only
TEMBLOR	P2-1:A15:35:_MIDWAY-TEMBLOR 115KV [2630] (PSE MCKJ-BELRDG J)	P2	Line section w/o fault	1.02	1.02	1.04	1.04	1.04	1.03	0.56	1.02	TBD	Sensitivity Only
PSE MCKT	P2-4:A15:9:_MIDWAY 115KV - SECTION 2E & 2D	P2	Bus Tie Breaker	1.02	1.02	1.04	1.04	1.04	1.03	0.84	1.02	TBD	Sensitivity Only
PSE MCKT	P2-1:A15:30:_MIDWAY-TEMBLOR 115KV [2630] (BELRDG J-MIDWAY)	P2	Line section w/o fault	1.02	1.02	1.04	1.04	1.04	1.03	0.84	1.02	TBD	Sensitivity Only
PSE MCKT	P2-2:A15:42:_MIDWAY 115KV SECTION 2D	P2	Bus	1.02	1.02	1.04	1.04	1.04	1.03	0.84	1.02	TBD	Sensitivity Only
PSE MCKT	P2-3:A15:71:_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN LINE	P2	Non-bus tie breaker	1.02	1.02	1.04	1.04	1.04	1.03	0.84	1.02	TBD	Sensitivity Only
PSE MCKT	P2-4:A15:11:_MIDWAY 115KV - SECTION 2D & 1D	P2	Non-bus tie breaker	1.02	1.02	1.04	1.04	1.04	1.03	0.85	1.02	TBD	Sensitivity Only
PSE MCKT	P2-1:A15:35:_MIDWAY-TEMBLOR 115KV [2630] (PSE MCKJ-BELRDG J)	P2	Line section w/o fault	1.02	1.02	1.04	1.04	1.04	1.03	0.56	1.02	TBD	Sensitivity Only
7STNDRD	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.55	0.61	NA	1.04	NA	NA	0.98	0.60	TBD	Install Redundant Battery
7STNDRD	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.56	0.61	NA	1.04	NA	NA	0.98	0.60	TBD	Install Redundant Relay
CRCKERNFRNT	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.58	0.63	NA	1.03	NA	NA	0.99	0.62	TBD	Install Redundant Battery
VEDDER	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.58	0.63	NA	1.03	NA	NA	0.99	0.63	TBD	Install Redundant Battery
CRCKERNFRNT	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.58	0.63	NA	1.03	NA	NA	0.99	0.62	TBD	Install Redundant Relay
POSO MT	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.58	0.64	NA	1.03	NA	NA	0.99	0.63	TBD	Install Redundant Battery
VEDDER	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.58	0.63	NA	1.03	NA	NA	0.99	0.63	TBD	Install Redundant Relay

Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
POSO MT	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.58	0.64	NA	1.03	NA	NA	0.99	0.63	TBD	Install Redundant Relay
KERN OIL	P4-2:A15:2:_ KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.59	0.64	NA	1.04	NA	NA	1.00	0.63	TBD	Install Redundant Battery
DEXZEL	P4-2:A15:2:_ KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.59	0.64	NA	1.04	NA	NA	1.00	0.64	TBD	Install Redundant Battery
GODN_BER	P4-2:A15:2:_ KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.59	0.64	NA	1.04	NA	NA	1.00	0.64	TBD	Install Redundant Battery
KERN OIL	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.59	0.64	NA	1.04	NA	NA	1.00	0.63	TBD	Install Redundant Relay
DEXZEL	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.59	0.64	NA	1.04	NA	NA	1.00	0.64	TBD	Install Redundant Relay
GODN_BER	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.59	0.64	NA	1.04	NA	NA	1.00	0.64	TBD	Install Redundant Relay
RASMUSEN	P4-2:A15:2:_ KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.59	0.65	NA	1.04	NA	NA	1.00	0.64	TBD	Install Redundant Battery
DISCOVER	P4-2:A15:2:_ KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.59	0.65	NA	1.04	NA	NA	1.00	0.64	TBD	Install Redundant Battery
RASMUSEN	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.60	0.65	NA	1.04	NA	NA	1.00	0.64	TBD	Install Redundant Relay
DISCOVER	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.60	0.65	NA	1.04	NA	NA	1.00	0.64	TBD	Install Redundant Relay
LIVEOAKSWSTA	P4-2:A15:2:_ KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.60	0.64	NA	1.04	NA	NA	1.00	0.64	TBD	Install Redundant Battery
LIVEOAKSWSTA	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.60	0.64	NA	1.04	NA	NA	1.00	0.64	TBD	Install Redundant Relay
LERDO	P4-2:A15:2:_ KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.60	0.66	NA	1.04	NA	NA	0.98	0.65	TBD	Install Redundant Battery
LIVE OAK	P4-2:A15:2:_ KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.61	0.65	NA	1.04	NA	NA	1.01	0.64	TBD	Install Redundant Battery
LERDO	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.61	0.66	NA	1.04	NA	NA	0.98	0.65	TBD	Install Redundant Relay

Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
LIVE OAK	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.61	0.65	NA	1.04	NA	NA	1.01	0.64	TBD	Install Redundant Relay
EISEN	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.61	0.69	0.30	1.01	NA	NA	0.99	0.67	TBD	Install Redundant Battery, long term load forecast under review
EISEN	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.61	0.69	0.30	1.01	NA	NA	0.99	0.67	TBD	Install Redundant Battery, long term load forecast under review
BAKRSFLD	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.62	0.70	0.31	1.02	NA	NA	1.00	0.68	TBD	Install Redundant Battery, long term load forecast under review
BAKRSFLD	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.62	0.70	0.31	1.02	NA	NA	1.00	0.68	TBD	Install Redundant Battery, long term load forecast under review
MAGUNDEN	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.62	0.70	0.31	1.03	NA	NA	1.00	0.68	TBD	Install Redundant Battery, long term load forecast under review
MAGUNDEN	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.62	0.70	0.31	1.03	NA	NA	1.00	0.68	TBD	Install Redundant Battery, long term load forecast under review
CARNATIO	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.63	0.71	0.31	1.02	NA	NA	1.01	0.69	TBD	Install Redundant Battery, long term load forecast under review
CARNATIO	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.63	0.71	0.31	1.02	NA	NA	1.01	0.69	TBD	Install Redundant Battery, long term load forecast under review
FRUITVLE	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.63	0.71	0.31	1.02	NA	NA	1.01	0.69	TBD	Install Redundant Battery, long term load forecast under review
FRUITVLE	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.64	0.71	0.31	1.02	NA	NA	1.01	0.69	TBD	Install Redundant Battery, long term load forecast under review
KERN PW1	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.64	0.71	0.32	1.02	NA	NA	1.01	0.69	TBD	Install Redundant Battery, long term load forecast under review
KERN PW1	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.64	0.71	0.32	1.02	NA	NA	1.01	0.69	TBD	Install Redundant Battery, long term load forecast under review
OLD_RVR1	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.64	0.72	0.36	1.03	NA	NA	1.02	0.70	TBD	Install Redundant Battery, long term load forecast under review
OLD_RVR1	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.64	0.72	0.36	1.03	NA	NA	1.02	0.70	TBD	Install Redundant Battery, long term load forecast under review
OLD RIVR	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.64	0.72	0.36	1.03	NA	NA	1.02	0.70	TBD	Install Redundant Battery, long term load forecast under review

Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
OLD RIVR	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.64	0.72	0.36	1.03	NA	NA	1.02	0.70	TBD	Install Redundant Battery, long term load forecast under review
PANAMA	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.64	0.72	0.32	1.02	NA	NA	1.02	0.70	TBD	Install Redundant Battery, long term load forecast under review
PANAMA	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.64	0.72	0.32	1.02	NA	NA	1.02	0.70	TBD	Install Redundant Battery, long term load forecast under review
CAWELO B	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.67	0.73	0.30	1.01	NA	NA	0.99	0.72	TBD	Install Redundant Battery, long term load forecast under review
CAWELO B	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.67	0.73	0.30	1.01	NA	NA	0.99	0.72	TBD	Install Redundant Battery, long term load forecast under review
SAN EMDO	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.73	0.79	0.52	1.03	NA	NA	1.03	0.78	TBD	Install Redundant Battery, long term load forecast under review
SAN EMDO	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.73	0.79	0.52	1.03	NA	NA	1.03	0.77	TBD	Install Redundant Battery, long term load forecast under review
MC FRLND	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.73	0.77	0.28	1.00	NA	NA	0.96	0.76	TBD	Install Redundant Battery, long term load forecast under review
MC FRLND	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.73	0.77	0.28	1.00	NA	NA	0.96	0.76	TBD	Install Redundant Battery, long term load forecast under review
FAMOSO	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.73	0.78	0.29	1.01	NA	NA	0.98	0.77	TBD	Install Redundant Battery, long term load forecast under review
FAMOSO	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.73	0.78	0.29	1.01	NA	NA	0.98	0.77	TBD	Install Redundant Battery, long term load forecast under review
FAMOSO	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.75	0.79	1.02	1.03	1.03	1.05	1.00	0.78	TBD	Install Redundant Battery
FAMOSO	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.75	0.79	1.02	1.03	1.03	1.05	1.00	0.78	TBD	Install Redundant Relay
WASCO	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.79	0.82	0.97	1.00	0.98	1.01	0.97	0.82	TBD	Install Redundant Battery
WASCO	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.79	0.82	0.97	1.00	0.98	1.01	0.97	0.82	TBD	Install Redundant Relay
S_KERN	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.81	0.87	0.67	1.04	NA	NA	1.03	0.85	TBD	Install Redundant Battery, long term load forecast under review

Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
S_KERN	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.82	0.87	0.67	1.04	NA	NA	1.03	0.85	TBD	Install Redundant Battery, long term load forecast under review
CHARKA	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.83	0.86	1.02	1.03	1.03	1.05	1.02	0.86	TBD	Install Redundant Battery
CHARKA	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.84	0.86	1.02	1.03	1.03	1.05	1.02	0.86	TBD	Install Redundant Relay
COPUS_E	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.86	0.90	0.74	1.04	1.02	1.03	1.03	0.89	TBD	Install Redundant Battery, long term load forecast under review
COPUS_E	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.86	0.90	0.74	1.04	1.02	1.03	1.03	0.89	TBD	Install Redundant Battery, long term load forecast under review
BSCL_PLD	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.86	0.90	0.74	1.04	1.02	1.03	1.03	0.89	TBD	Install Redundant Battery, long term load forecast under review
BSCL_PLD	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.86	0.90	0.74	1.04	1.02	1.03	1.03	0.89	TBD	Install Redundant Battery, long term load forecast under review
KERNRDGE_L19	P5-5C(DC):A15:7:_MIDWAY 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.87	0.88	0.97	0.97	0.97	0.93	0.50	0.87	TBD	Install Redundant Relay
KERNRDGE_L04	P5-5C(DC):A15:7:_MIDWAY 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.87	0.88	0.97	0.97	0.97	0.93	0.49	0.88	TBD	Install Redundant Relay
WSCOPRSN	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.90	0.92	1.02	1.03	1.03	1.05	1.03	0.91	TBD	Install Redundant Battery
WSCOPRSN	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.90	0.92	1.02	1.03	1.03	1.05	1.03	0.91	TBD	Install Redundant Relay
MRCPAWST	P4-2:A15:2:_KERN PP 115KV CB 102 112 132 142 152 212 222 232 262 272 OR 312	P4	Non-redundant relay	0.90	0.94	0.80	1.04	1.02	1.03	1.03	0.93	TBD	Install Redundant Battery, long term load forecast under review
MRCPAWST	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.90	0.94	0.80	1.04	1.02	1.03	1.03	0.93	TBD	Install Redundant Battery, long term load forecast under review
GARDNER	P5-5C(DC):A15:26:_KERN 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.91	0.94	0.82	1.03	1.02	1.03	1.03	0.94	TBD	Continue to Monitor
KERNRDGE_L18	P5-5C(DC):A15:7:_MIDWAY 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.94	0.95	1.03	1.03	1.03	1.00	0.53	0.95	TBD	Sensitivity Only
KERNRDGE_L34	P5-5C(DC):A15:7:_MIDWAY 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.94	0.95	1.03	1.03	1.03	1.00	0.53	0.95	TBD	Sensitivity Only

2023-2024 ISO Reliability Assessment - Preliminary Study Results

Study Area: Kern

Low Voltages

Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
KERNRDGE_L32	P5-5C(DC):A15:7:_MIDWAY 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.94	0.95	1.03	1.03	1.03	1.00	0.53	0.95	TBD	Sensitivity Only
KERNRDGE_L11	P5-5C(DC):A15:7:_MIDWAY 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.95	0.95	1.03	1.03	1.03	1.00	0.53	0.95	TBD	Sensitivity Only
KERNRDGE	P5-5C(DC):A15:7:_MIDWAY 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay	0.95	0.95	1.04	1.04	1.04	1.01	0.54	0.95	TBD	Sensitivity Only
EISEN	P1-3:A15:52:_KERN PW2 70/115KV TB 1	P1	N-1	0.72	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
LERDO	P1-2:A15:45:_LERDO-KERN OIL-7TH STANDARD 115KV [1950]	P1	N-1	0.85	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
ELK HLLS	P1-3:A15:49:_TAFT 115/70KV TB 1	P1	N-1	0.86	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
LERDO	P1-1:A15:32:_MT POSO 13.80KV GEN UNIT 1	P1	N-1	0.86	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
MC FRLND	P1-2:A15:34:_SMYRNA-SEMITROPIC-MIDWAY 115KV [3710] MOAS OPENED ON GANSO_MIDWAY	P1	N-1	0.86	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
TX_BV_HL	P1-3:A15:49:_TAFT 115/70KV TB 1	P1	N-1	0.86	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
LERDO	P1-3:A15:58:_OGLE TAP 115/13.8KV TB 1	P1	N-1	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
NORTHMWY	P1-3:A15:49:_TAFT 115/70KV TB 1	P1	N-1	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
MDWY_P_S	P1-3:A15:49:_TAFT 115/70KV TB 1	P1	N-1	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
CUYAMA	P1-3:A15:42:_TAFT 115/70KV TB 2	P1	N-1	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
CUYAMASLR	P1-3:A15:42:_TAFT 115/70KV TB 2	P1	N-1	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
TEMBLOR	P1-3:A15:42:_TAFT 115/70KV TB 2	P1	N-1	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
MCKTTRCK	P1-3:A15:42:_TAFT 115/70KV TB 2	P1	N-1	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
NORTHMWY	P1-3:A15:42:_TAFT 115/70KV TB 2	P1	N-1	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
MDWY_P_S	P1-3:A15:42:_TAFT 115/70KV TB 2	P1	N-1	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
TAFT_SW_TAFC	P1-3:A15:49:_TAFT 115/70KV TB 1	P1	N-1	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
TAFT A	P1-3:A15:49:_TAFT 115/70KV TB 1	P1	N-1	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
TAFT_SW_TAFM	P1-3:A15:49:_TAFT 115/70KV TB 1	P1	N-1	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
LERDO	P1-2:A15:53:_SEMITROPIC-MIDWAY #1 115KV [3630]	P1	N-1	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
GOSE LKE	P1-2:A15:34:_SMYRNA-SEMITROPIC-MIDWAY 115KV [3710] MOAS OPENED ON GANSO_MIDWAY	P1	N-1	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
GOSE LKE	P1-2:A15:53:_SEMITROPIC-MIDWAY #1 115KV [3630]	P1	N-1	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
TAFT_SW_TAFC	P1-3:A15:42:_TAFT 115/70KV TB 2	P1	N-1	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
TAFT A	P1-3:A15:42:_TAFT 115/70KV TB 2	P1	N-1	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
TAFT_SW_TAFM	P1-3:A15:42:_TAFT 115/70KV TB 2	P1	N-1	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
WILDWOOD2	P1-2:A15:34:_SMYRNA-SEMITROPIC-MIDWAY 115KV [3710] MOAS OPENED ON GANSO_MIDWAY	P1	N-1	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
EISEN	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	0.72	0.74	0.30	>0.9	>0.9	>0.9	>0.9	0.73	TBD	Long term load forecast under review
BAKRSFLD	::P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	0.73	0.75	0.30	>0.9	>0.9	>0.9	>0.9	0.74	TBD	Long term load forecast under review
CARNATIO	:::P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	0.74	0.76	0.31	>0.9	>0.9	>0.9	>0.9	0.75	TBD	Long term load forecast under review
CAWELO B	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	0.77	0.79	0.30	>0.9	>0.9	>0.9	>0.9	0.78	TBD	Long term load forecast under review
CELERON	:P1-3:A15:49:_TAFT 115/70KV TB 1	P6	N-1-1	0.87	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.78	TBD	Project: Kern 115kV Reinforcement
CUYAMA	:P1-3:A15:49:_TAFT 115/70KV TB 1	P6	N-1-1	0.87	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
CUYAMASLR	:P1-3:A15:49:_TAFT 115/70KV TB 1	P6	N-1-1	0.87	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
EISEN	:P1-3:A15:51:_KERN PW1 70/115KV TB 1	P6	N-1-1	0.72	0.74	0.30	>0.9	>0.9	>0.9	>0.9	0.73	TBD	Long term load forecast under review
ELK HLLS	:P1-3:A15:49:_TAFT 115/70KV TB 1	P6	N-1-1	0.86	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
FAMOSO	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	0.82	>0.9	0.29	>0.9	>0.9	>0.9	>0.9	0.90	TBD	Long term load forecast under review
FRUITVLE	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	0.74	0.76	0.31	>0.9	>0.9	>0.9	>0.9	0.75	TBD	Long term load forecast under review
KERN PW1	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	0.74	>0.9	0.31	>0.9	>0.9	>0.9	>0.9	0.75	TBD	Long term load forecast under review
KNG_ELIS	:P1-3:A15:49:_TAFT 115/70KV TB 1	P6	N-1-1	0.87	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement

2023-2024 ISO Reliability Assessment - Preliminary Study Results

Study Area: Kern

Low Voltages



Substation	Contingency (All and Worst)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
LERDO	:P1-2:A15:45:_LERDO-KERN OIL-7TH STANDARD 115KV [1950]	P6	N-1-1	0.85	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.84	TBD	Project: Kern 115kV Reinforcement
MAGUNDEN	:P1-3:A15:51:_KERN PW1 70/115KV TB 1	P6	N-1-1	0.73	0.75	0.30	>0.9	>0.9	>0.9	>0.9	0.87	TBD	Long term load forecast under review
MC FRLND	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	0.82	0.83	0.27	>0.9	>0.9	>0.9	>0.9	0.74	TBD	Long term load forecast under review
MC FRLND	:P1-3:A15:51:_KERN PW1 70/115KV TB 1	P6	N-1-1	0.82	0.83	0.27	>0.9	>0.9	>0.9	>0.9	0.74	TBD	Long term load forecast under review
MCKTTRCK	:P1-3:A15:49:_TAFT 115/70KV TB 1	P6	N-1-1	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
MDWY_P_S	:P1-3:A15:49:_TAFT 115/70KV TB 1	P6	N-1-1	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
NORTHMWY	:P1-3:A15:49:_TAFT 115/70KV TB 1	P6	N-1-1	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
OLD RIVR	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	0.74	0.77	0.36	>0.9	>0.9	>0.9	>0.9	0.76	TBD	Long term load forecast under review
OLD_RVR1	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	0.74	0.77	0.35	>0.9	>0.9	>0.9	>0.9	0.76	TBD	Long term load forecast under review
PANAMA	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	0.75	0.77	0.31	>0.9	>0.9	>0.9	>0.9	0.76	TBD	Long term load forecast under review
S_KERN	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	0.87	0.89	0.66	>0.9	>0.9	>0.9	>0.9	0.88	TBD	Long term load forecast under review
SAN EMDO	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	0.81	0.83	0.51	>0.9	>0.9	>0.9	>0.9	0.82	TBD	Long term load forecast under review
TEMBLOR	:P1-3:A15:49:_TAFT 115/70KV TB 1	P6	N-1-1	0.87	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
TX_BV_HL	:P1-3:A15:49:_TAFT 115/70KV TB 1	P6	N-1-1	0.86	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
WASCO	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	0.87	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.87	TBD	Project: Kern 115kV Reinforcement
GOSE LKE	:P1-2:A15:34:_SMYRNA-SEMITROPIC-MIDWAY 115KV [3710] MOAS OPENED ON GANSO MIDWAY	P6	N-1-1	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
TAFT_SW_TAFC	:P1-3:A15:42:_TAFT 115/70KV TB 2	P6	N-1-1	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
TAFT A	:P1-3:A15:42:_TAFT 115/70KV TB 2	P6	N-1-1	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
TAFT_SW_TAFM	:P1-3:A15:42:_TAFT 115/70KV TB 2	P6	N-1-1	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Project: Kern 115kV Reinforcement
WILDWOOD2	:P1-2:A15:34:_SMYRNA-SEMITROPIC-MIDWAY 115KV [3710] MOAS OPENED ON GANSO MIDWAY	P6	N-1-1	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.89	TBD	Project: Kern 115kV Reinforcement
BSCL_PLD	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	0.73	>0.9	>0.9	>0.9	TBD	System adjustments or voltage support if necessary
CADET	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	0.89	>0.9	>0.9	>0.9	TBD	System adjustments or voltage support if necessary
MOCO	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	0.89	>0.9	>0.9	>0.9	TBD	System adjustments or voltage support if necessary
MRCPAWST	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	0.79	>0.9	>0.9	>0.9	TBD	System adjustments or voltage support if necessary
COPUS_E	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	0.73	>0.9	>0.9	>0.9	TBD	System adjustments or voltage support if necessary
MARICOPA	:P1-3:A15:52:_KERN PW2 70/115KV TB 1	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	TBD	System adjustments or voltage support if necessary
GOSE LKE	:P1-2:A15:34:_SMYRNA-SEMITROPIC-MIDWAY 115KV [3710] MOAS OPENED ON GANSO MIDWAY	P6	N-1-1	>0.9	>0.9	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	TBD	Continue to Monitor
CAWELO C	P1-2:A15:45:_LERDO-KERN OIL-7TH STANDARD 115KV [1950]	P3	G-1/N-1	0.88	0.86	>0.9	>0.9	0.86	>0.9	>0.9	0.86	TBD	Project: Kern 115kV Reinforcement
LERDO	P1-2:A15:45:_LERDO-KERN OIL-7TH STANDARD 115KV [1950]	P3	G-1/N-1	0.85	0.83	>0.9	>0.9	0.83	>0.9	>0.9	0.83	TBD	Project: Kern 115kV Reinforcement
FAMOSO	P1-2:A15:45:_LERDO-KERN OIL-7TH STANDARD 115KV [1950]	P3	G-1/N-1	>0.9	0.89	>0.9	>0.9	0.89	>0.9	>0.9	0.90	TBD	Project: Kern 115kV Reinforcement



Substation	Contingency	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)						Post Cont. Voltage Deviation % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
CARRIZO 115 kV	P1-2:A15:36:_MIDWAY-TEMBLOR 115KV [2630]	P1	N-1	<8	<8	<8	<8	<8	<8	<8	30	<8	Sensitivity only
KERNRDGE 115 kV	P1-2:A15:36:_MIDWAY-TEMBLOR 115KV [2630]	P1	N-1		<8	<8	<8	<8	<8	<8	44	<8	Sensitivity only
KERNRDGE_L04 69 kV	P1-2:A15:36:_MIDWAY-TEMBLOR 115KV [2630]	P1	N-1	8	<8	<8	<8	<8	<8	<8	43	<8	Project: Kern 115kV Reinforcement
KERNRDGE_L04 69 kV	P1-3:A15:109:_KERNRDGELH 69/4.16KV TB 1	P1	N-1	<8	<8	<8	<8	<8	<8	<8	3	<8	Sensitivity only
KERNRDGELH 69 kV	P1-2:A15:36:_MIDWAY-TEMBLOR 115KV [2630]	P1	N-1	8	<8	<8	<8	<8	<8	<8	43	<8	Project: Kern 115kV Reinforcement
KERNRDGELH 69 kV	P1-3:A15:109:_KERNRDGELH 69/4.16KV TB 1	P1	N-1	<8	<8	<8	<8	<8	<8	<8	4	<8	Sensitivity only
TEMBLOR 115 kV	P1-2:A15:36:_MIDWAY-TEMBLOR 115KV [2630]	P1	N-1	<8	<8	<8	<8	<8	<8	<8	43	<8	Sensitivity only

Contingency	Category	Category Description	Transient Stability Performance					Potential Mitigation Solutions
			Baseline Scenarios			Sensitivity Scenarios		
			2025 Spring Off-Peak	2028 Summer Peak	2035 Summer Peak	2028 SP High CEC Forecast	2025 OP Sensitivity	
In accordance with TPL-001-5- Requirement R2.6, this area relies on the past studies from the 2022-23 Transmission Planning Process.								
http://www.caiso.com/Documents/BoardApproved2022-2023TransmissionPlan.pdf								

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)									Potential Mitigation Solutions
			2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	

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

Substation	Load Served (MW)									Potential Mitigation Solutions
	2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2028 Summer-Off Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	

No single source substation with more than 100 MW